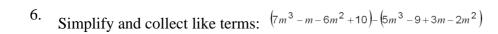
1. Simplify and collect like terms: (-p) + (-3p) + (4p)

2. Simplify and collect like terms: (5s - 2t) - (2s - 4t)

3. Simplify and collect like terms:  $4x^2y + (-3x^2y) - (-5x^2y)$ 

4. Simplify and collect like terms:  $1 - (7e^2 - 5 + 3e - e^3)$ 

5. Simplify and collect like terms:  $(6x^2 - 3xy + 4y^2) - (8y^2 - 10xy - x^2)$ 



7. Simplify and collect like terms: 
$$2(7x - 3y) - 3(2x - 3y)$$

8. Simplify and collect like terms: 
$$4(a^2 - 3a - 4) - 2(5a^2 - a - 6)$$

9. Simplify and collect like terms: 
$$15x - [4 - 2(5x - 6)]$$

10. Simplify and collect like terms: 
$$6a - [3a - 2(2b - a)]$$

11. Simplify and collect like terms: 
$$\frac{2x+9}{4}-1.2(x-1)$$

12. Simplify and collect like terms: 
$$\frac{x}{2} - x^2 + \frac{4}{5} - 0.2x^2 - \frac{4}{5}x + \frac{1}{2}$$

13. Simplify and collect like terms: 
$$\frac{8x}{0.5} + \frac{5.5x}{11} + 0.5(4.6x - 17)$$

14. Simplify, collect like terms and maintain 5-figure accuracy: 
$$\frac{2x}{1.045} - \frac{2.016x}{3} + \frac{x}{2}$$

15. Simplify, collect like terms and maintain 5-figure accuracy: 
$$\frac{P}{1+0.095 \times \frac{5}{12}} + 2P \left(1+0.095 \times \frac{171}{365}\right)$$

16. Simplify, collect like terms and maintain 5-figure accuracy: 
$$y \left(1 - 0.125 \times \frac{213}{365}\right) + \frac{2y}{\left(1 + 0.125 \times \frac{88}{365}\right)}$$

17. Simplify, collect like terms and maintain 5-figure accuracy: 
$$k(1+0.04)^2 + \frac{2k}{(1+0.04)^2}$$

18.

Simplify, collect like terms and maintain 5-figure accuracy:

 $\frac{h}{(1+0.055)^2} - 3h(1+0.055)^3$ 

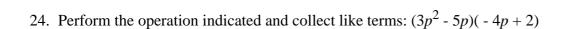
19. Perform the operation indicated and collect like terms: 4a(3ab - 5a + 6b)

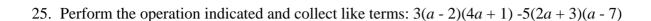
20. Perform the operation indicated and collect like terms:  $9k(4 - 8k + 7k^2)$ 

21. Perform the operation indicated and collect like terms:  $-5xy(2x^2 - xy - 3y^2)$ 

22. Perform the operation indicated and collect like terms:  $-(p^2 - 4pq - 5p)(\frac{2q}{p})$ 

23. Perform the operation indicated and collect like terms: (4r - 3t)(2t + 5r)





26. Perform the operation indicated and collect like terms: 
$$5(2x - y)(y + 3x) - 6x(x - 5y)$$

27. Perform the operation indicated and collect like terms: 
$$\frac{18x^2}{3x}$$

28. Perform the operation indicated and collect like terms: 
$$\frac{6a^2b}{-2ab^2}$$

29. Perform the operation indicated and collect like terms: 
$$\frac{x^2y - xy^2}{xy}$$

Perform the operation indicated and collect like terms:

Perform the operation indicated and collect like terms:

$$\frac{12x^3 - 24x^2 + 36x}{48x}$$

Perform the operation indicated and collect like terms:

$$\frac{32a^2b - 8ab + 14ab^2}{2ab}$$

Perform the operation indicated and collect like terms:

$$\frac{4a^2b^3 - 6a^3b^2}{2ab^2}$$

34.

Perform the operation indicated and collect like terms:

$$\frac{120(1+i)^2 + 180(1+i)^3}{360(1+i)}$$

35. Evaluate the following expression for the given value of the variable:  $3d^2 - 4d + 15$  for d = 2.5

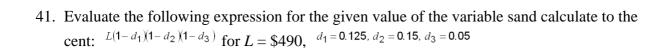
36. Evaluate the following expression for the given value of the variable: 15g - 9h + 3 for g = 14, h = 15

37. Evaluate the following expression for the given value of the variable: 7x(4y - 8) for x = 3.2, y = 1.5

38. Evaluate the following expression for the given value of the variables:  $I \div Pr$  for P = \$500, I = \$13.75, r = 0.11

39. Evaluate the following expression for the given value of the variables and calculate to the cent:  $\frac{I}{rt}$  for r = 0.095, I = \$23.21,  $t = \frac{283}{365}$ 

40. Evaluate the following expression for the given value of the variables and calculate to the cent:  $\frac{N}{1-d}$  for N = \$89.10, d = 0.10



42. Evaluate the following expression for the given value of the variables and calculate to the cent: P(1+rt) for P = \$770, r = 0.13,  $t = \frac{223}{365}$ 

43. Evaluate the following expression for the given value of the variables and calculate to the cent:  $\frac{S}{1+rt}$  for S = \$2500, r = 0.085,  $t = \frac{123}{365}$ 

44. Evaluate the following expression for the given value of the variable:  $(1+i)^m - 1$  for i = 0.0225, m = 4

Evaluate the following expression for the given value of the variables and calculate to the cent:  $P^{(1+i)^n}$  for P = \$1280, i = 0.025, n = 3

Evaluate the following expression for the given value of the variables and calculate to the cent: for S = \$850, i = 0.0075. n = 6

47. Evaluate the following expression for the given value of the variables and calculate to the

 $R\left[\frac{(1+i)^n-1}{i}\right]$  for R = \$550, i = 0.085, n = 3

48. Evaluate the following expression for the given value of the variables and calculate to the

 $R\left[\frac{(1+i)^n - 1}{i}\right](1+i)$  for R = \$910, i = 0.1038129, n = 4

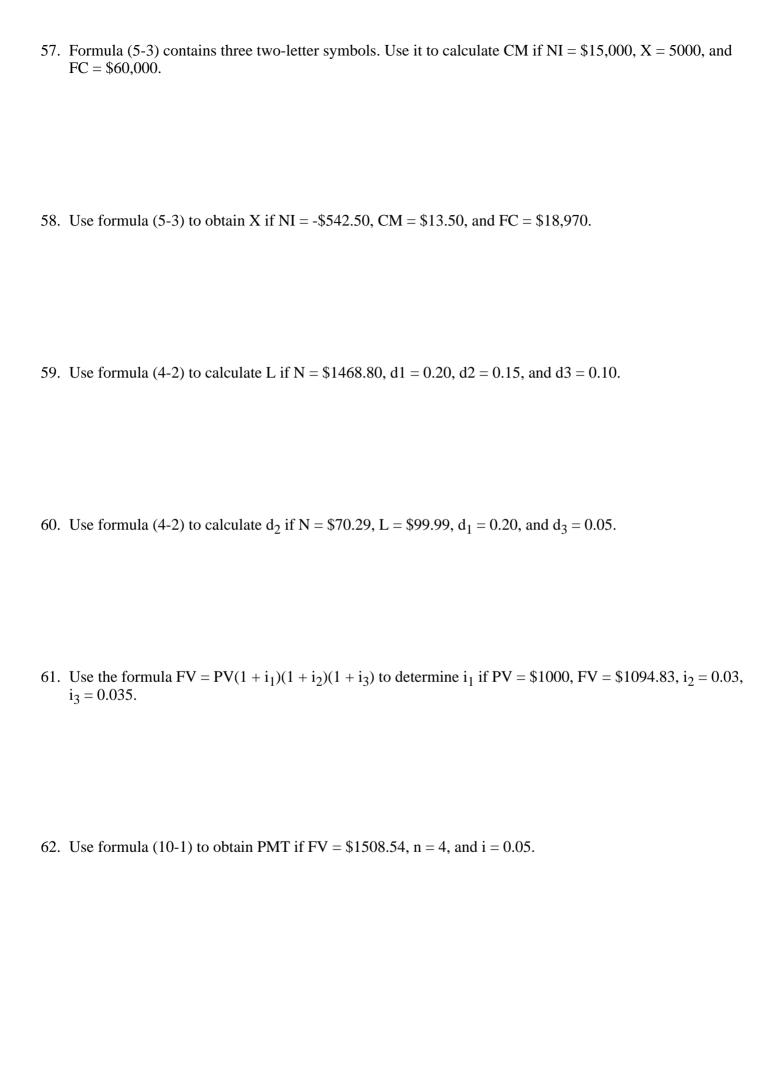
49. Evaluate the following expression for the given value of the variables and calculate to the

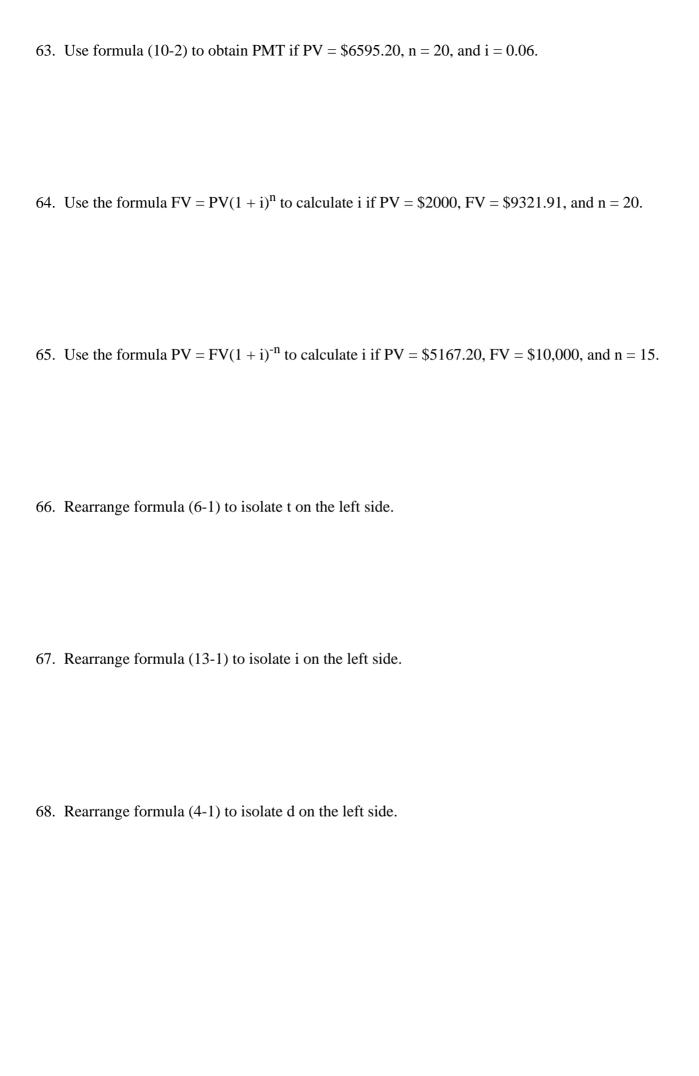
 $\frac{R}{i} \left[ 1 - \frac{1}{(1+i)^n} \right]$  for R = \$630, i = 0.115, n = 2

50. Evaluate the following expression for the given value of the variables and calculate to the cent:  $P(1+rt_1)$  +  $\frac{S}{1+rt_2}$  for P = \$470, S = \$390, r = 0.075,  $t_1 = \frac{104}{365}$ ,  $t_2 = \frac{73}{365}$ 

+ 
$$\frac{S}{1+rt_2}$$
 for  $P = \$470$ ,  $S = \$390$ ,  $r = 0.075$ ,  $t_1 = \frac{104}{365}$ ,  $t_2 = \frac{73}{365}$ 

51.	Use formula (6-1) to calculate P if $r = 0.05$ , $i = \$6.25$ , and $t = 0.25$ .
52.	Use formula (13-1) to calculate i if PMT = \$900 and PV = \$150,000. (There are several instances in our formulas where a two- or three-letter symbol is used for a variable. This is usually done to make the symbol more suggestive of the quantity it represents. For example, we use PMT to represent the amount of each payment in a series of regular payments. The symbol P has already been taken to represent another quantity that begins with "p.")
53.	Use formula (6-2) to calculate P if $r=0.004$ , $S=\$3626$ , and $t=9$ .
54.	Use formula (4-1) to calculate L if $N = \$891$ and $d = 0.10$ .
55.	Use formula (4-1) to calculate d if $N = \$410.85$ and $L = \$498.00$ .
56.	Use formula (6-2) to calculate t if $r = 0.0025$ , $S = \$5100$ , and $P = \$5000$ .





69. Rearrange formula (5-3) to isolate CM on the left side.
70. Rearrange formula (5-3) to isolate X on the left side.
71. Rearrange formula (6-2) to isolate r on the left side.
72. Rearrange formula (6-2) to isolate t on the left side.
73. Rearrange formula (4-2) to isolate d1 on the left side.
74. Rearrange formula (4-2) to isolate d3 on the left side.



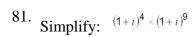
76. Rearrange the formula 
$$FV = PV(1 + i)^n$$
 to isolate i on the left side.

77. Simplify: 
$$a^2 \times a^3$$

78. Simplify: 
$$(x^6)(x^{-4})$$

79. Simplify: 
$$b^{10} 
ightharpoonup b^6$$

80. Simplify: 
$$h^7 \div h^{-4}$$



82. Simplify: 
$$(1+i) \times (1+i)^n$$

83. Simplify: 
$$(x^4)^7$$

84. Simplify: 
$$(y^3)^3$$

85. Simplify: 
$$(t^6)^{1/3}$$

86. Simplify: 
$$\binom{n^{0.5}}{}^8$$

88. Simplify: 
$$\frac{(x^5)^6}{x^9}$$

89. Simplify: 
$$[2(1+i)]^2$$

90. Simplify: 
$$\left(\frac{1+i}{3i}\right)^3$$

91. 
$$\frac{4r^{5}t^{6}}{(2r^{2}t)^{3}}$$
 Simplify:

$$\frac{\left(-r^3\right)(2r)^4}{\left(2r^{-2}\right)^2}$$

94. Evaluate to six-figure accuracy: 
$$(-27^{2/3})$$

97. Evaluate to six-figure accuracy: 
$$(0.001)^{-2}$$

99. Evaluate to six-figure accuracy:  $(1.0085)^5(1.0085)^3$ 

100. Evaluate to six-figure accuracy:  $(1.005)^3(1.005)^{-6}$ 

101. Evaluate to six-figure accuracy:  $\sqrt[3]{1.03}$ 

102. Evaluate to six-figure accuracy:  $\sqrt[6]{1.05}$ 

103.  $\left(4^{4}\right)\left(3^{-3}\left(-\frac{3}{4}\right)^{3}$ Evaluate to six-figure accuracy:

 $\left[\left(-\frac{3}{4}\right)^2\right]^{-2}$ 

Evaluate to six-figure accuracy:

Evaluate to six-figure accuracy:  $\left(\frac{2}{3}\right)^3 \left(-\frac{3}{2}\right)^2 \left(-\frac{3}{2}\right)^{-3}$ 

$$\left(\frac{2}{3}\right)^3 \left(-\frac{3}{2}\right)^2 \left(-\frac{3}{2}\right)^{-3}$$

Evaluate to six-figure accuracy:

$$\left(-\frac{2}{3}\right)^3 \div \left(\frac{3}{2}\right)^{-2}$$

107.

$$1.03^{16} - 1$$

Evaluate to six-figure accuracy:

108.

$$\frac{\left(\!1.008\overline{3}\right)^{\!30}-1}{0.008\overline{3}}$$

Evaluate to six-figure accuracy:

109.

Evaluate to six-figure accuracy:

110.

$$7: \frac{1 - (1.00\overline{6})^{-32}}{0.00\overline{6}}$$

Evaluate to six-figure accuracy:

111. Evaluate to six-figure accuracy:  $(1+0.0275)^{1/3}$ 

112. Evaluate to six-figure accuracy:  $(1+0.055)^{1/6}-1$ 

113. Solve the following equation: 10a + 10 = 12 + 9a

114. Solve the following equation: 29 - 4y = 2y - 7

$$29 - 4y = 2y - 7$$

115. Solve the following equation: 0.5(x - 3) = 20

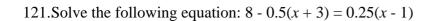
116. Solve the following equation:  $\frac{1}{3}$  (x - 2) = 4

117. Solve the following equation: y = 192 + 0.04y

118. Solve the following equation: x - 0.025x = 341.25

119. Solve the following equation: 12x - 4(2x - 1) = 6(x + 1) - 3

120. Solve the following equation: 3y - 4 = 3(y + 6) - 2(y + 3)



122. Solve the following equation: 
$$5(2 - c) = 10(2c - 4) - 6(3c + 1)$$

123. Solve the following equation: 
$$3.1t + 145 = 10 + 7.6t$$

124. Solve the following equation: 
$$1.25y - 20.5 = 0.5y - 11.5$$

125. Solve the following equation accurate to the cent: 
$$\frac{x}{1.1^2} + 2x(1.1)^3 = \$1000$$

126. Solve the following equation accurate to the cent: 
$$\frac{3x}{1.025^6} + x(1.025)^8 = \$2641.35$$

Solve the following equation accurate to the cent: 
$$\frac{2x}{1.03^7} + x + x \left(1.03^{10}\right) = \$1000 + \frac{\$2000}{1.03^4}$$

Solve the following equation accurate to the cent:

$$x(1.05)^3 + \$1000 + \frac{x}{1.05^7} = \frac{\$5000}{1.05^2}$$

Solve the following equation accurate to the cent:

$$x\left(1+0.095 \times \frac{84}{365}\right) + \frac{2x}{\left(1+0.095 \times \frac{108}{365}\right)} = \$1160.20$$

Solve the following equation accurate to the cent:

$$\frac{x}{1+0.115 \times \frac{78}{365}} + 3x \left(1+0.115 \times \frac{121}{365}\right) = \$1000 \left(1+0.115 \times \frac{43}{365}\right)$$

131. Solve the following pair of equations. Verify your solution.

$$x - y = 2$$

$$3x + 4y = 20$$

132. Solve the following pair of equations. Verify your solution.

$$y - 3x = 11$$
  
 $5x + 30 = 4y$ 

133. Solve the following pair of equations. Verify your solution.

$$4a - 3b = -3$$

$$5a - b = 10$$

134. Solve the following pair of equations. Verify your solution.

$$7p - 3q = 23$$

$$-2p - 3q = 5$$

135.7x - y = 35

Solve the following pair of equations. Verify your solution.

$$y = 2x$$

136. Solve the following pair of equations. Verify your solution.

$$g - h = 17^{\frac{4}{3}g + \frac{3}{2}h = 0}$$

137. Solve the following pair of equations	to three-figure accuracy.	Verify your solution.	d = 3c -	500
0.7c + 0.2d = 550				

138. Solve the following pair of equations to three-figure accuracy. Verify your solution. 
$$0.03x + 0.05y = 51$$
  
 $0.8x - 0.7y = 140$ 

139. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$2v + 6w = 1$$

$$-9w + 10v = 18$$

140. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$2.5a + 2b = 11$$

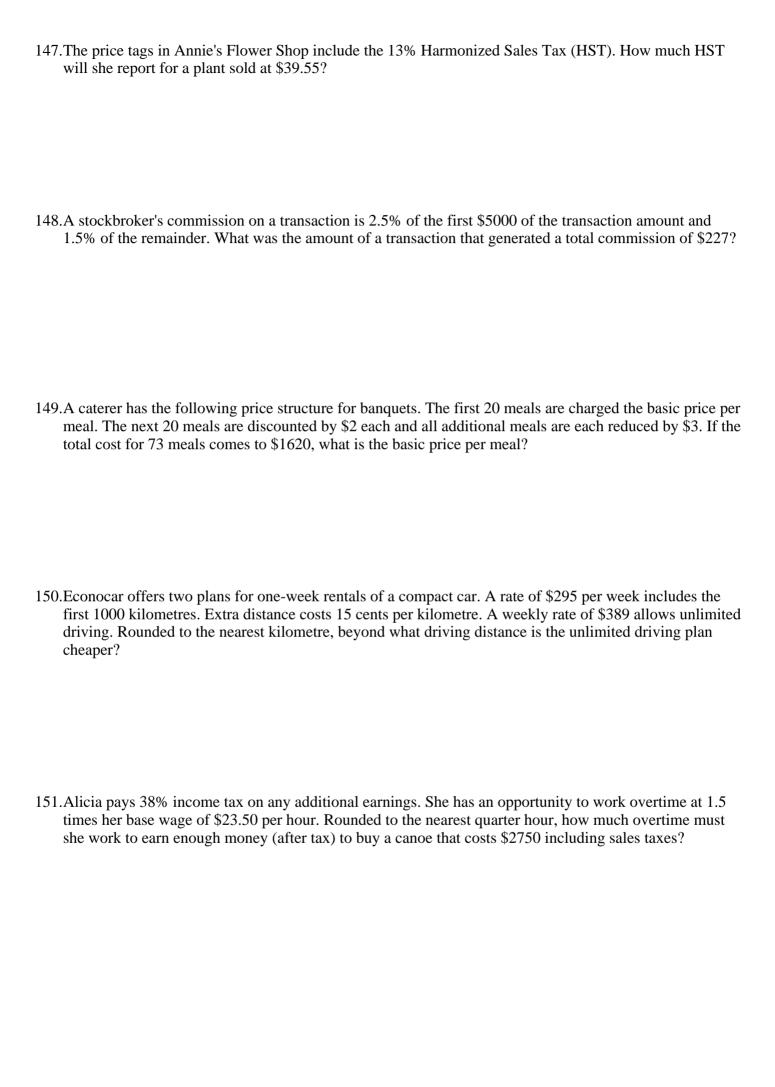
$$8a + 3.5b = 13$$

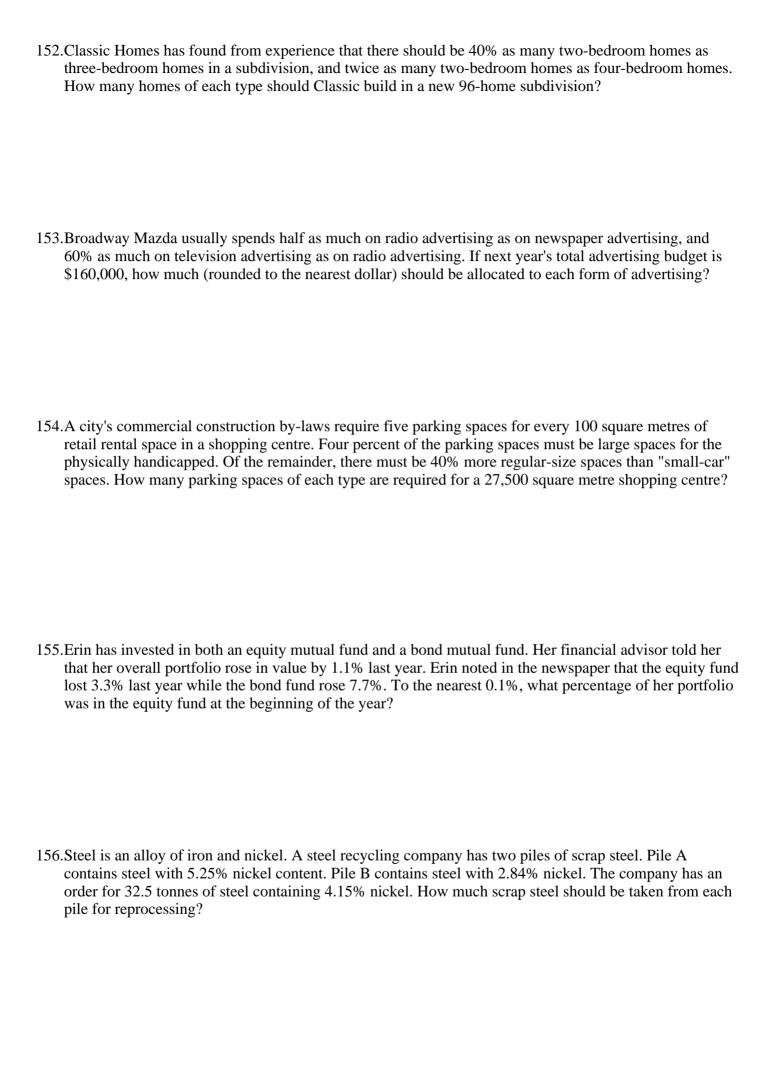
141. Solve the following pair of equations to three-figure accuracy. Verify your solution.

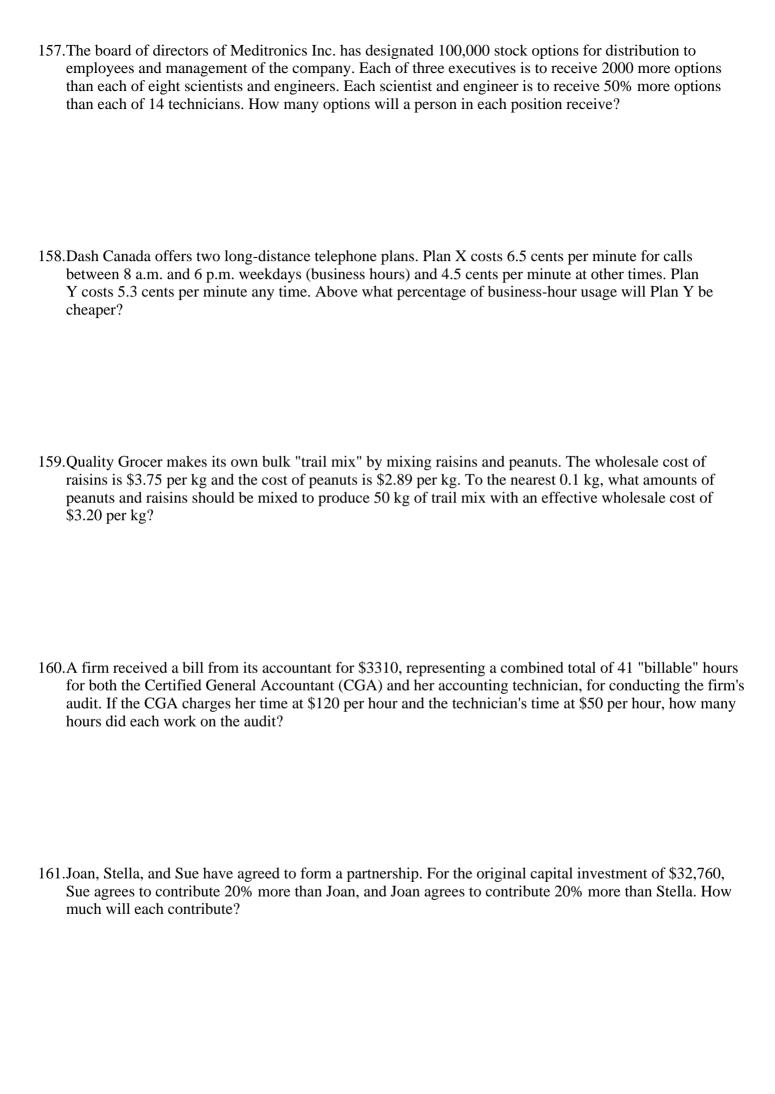
$$37x - 63y = 235$$

$$18x + 26y = 468$$

142. Solve the following pair of equations to three-figure accuracy. Verify your solution. $68.9n - 38.5m = 57$ $45.1n - 79.4m = -658$
143. Solve the following pair of equations to three-figure accuracy. Verify your solution. 0.33e + 1.67f = 292 1.2e + 0.61f = 377
144. Solve the following pair of equations. Verify your solution. $318j - 451k = 7.22$ $-249j + 193k = -18.79$
145.A web site had 2/7 more hits last month than in the same month of the preceding year. If there were 2655 hits last month, how many were there 1 year earlier?
146. The retail price of a pair of skis consists of the wholesale cost to the retailer plus the retailer's markup. If skis retailing for \$712 are marked up by 60% of the wholesale cost, what is that wholesale cost?

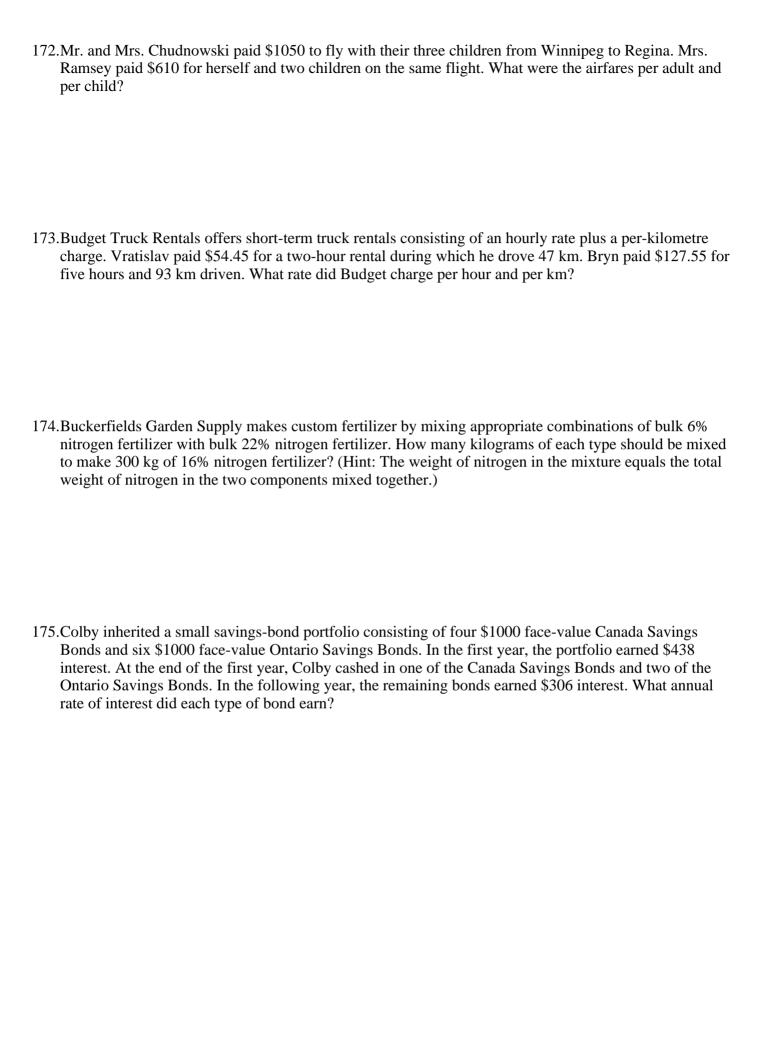






162. The annual net income of the SGR partnership is to be distributed so that Sven receives 30% less than George, and Robert receives 25% more than George. If the past year's net income was \$88,880, what amount should be allocated to each?
163.It takes 20 minutes of machine time to manufacture Product X and 30 minutes of machine time to manufacture Product Y. If the machine operated 47 hours last week to produce a combined total of 120 units of the two products, how many units of Y were manufactured?
164. The tickets for a hockey game cost \$19.00 for the blue section and \$25.50 for the red section. If 4460 tickets were sold for a total of \$93,450, how many seats were sold in each section?
165.Shirley had a three-sevenths interest in a partnership. She sold three-fifths of her interest for \$27,000.  a) What is the implied value of Shirley's remaining partnership interest?  b) What is the implied value of the entire partnership?
166.Regal Resources owns a 58% interest in a mineral claim. Yukon Explorations owns the remainder. If Regal sells one-fifth of its interest for \$1.2 million, what is the implied value of Yukon's interest?

p	The statistics for a professional accounting program indicate that five-sevenths of those who enter the program complete Level 1. Two-ninths of Level 1 completers do not finish Level 2. If 587 students ompleted Level 2 last year, how many (including this group of 587) began Level 1?
s a	Executive Fashions sold four-sevenths of its inventory at cost in a bankruptcy sale. The remainder was old to liquidators for \$6700, representing 45% of the cost of the goods.  What was the original cost of the inventory that was sold to the liquidators?  What were the proceeds from the bankruptcy sale?
n	The annual dues for the Southern Pines Golf Club are \$2140 for regular members and\$856 for student nembers. If the total revenue from the dues of 583 members for thepast year was \$942,028, how many nembers did the club have in each category?
p	The Hungry Heifer diner offers an all-you-can-eat buffet at \$12.95 per adult and \$8.95 per child. On a particular day, the diner had total buffet revenue of \$3304.70 from 266 customers. How many of the ustomers were children?
tl	Fina drove from Calgary to Vancouver, a distance of 1000 km, in 12.3 hours. She drove at 100 km/h or the "open road," but slowed to 50 km/h on urban and curving roads. What distance did she drive at each peed? (Hint: Travelling time at a particular speed 5 Distance/Speed)



176.Mr. LeClair and Ms. Bartoli own adjacent hobby farms. They have just received their property tax notices providing the following assessment and tax

Owner's name	Assessment on residence	Assessment on land and farm buildings	Total property tax
Mr. LeClair	\$400,000	\$300,000	\$3870
Ms. Bartoli	\$350,000	\$380,000	\$3774

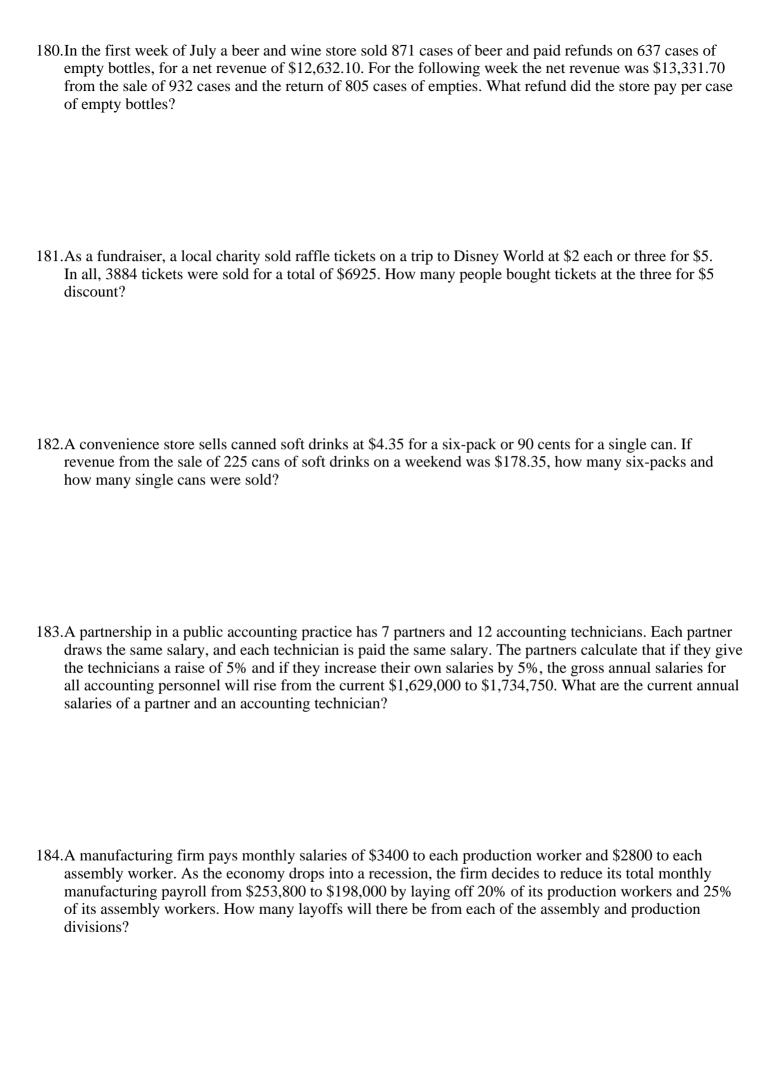
information:

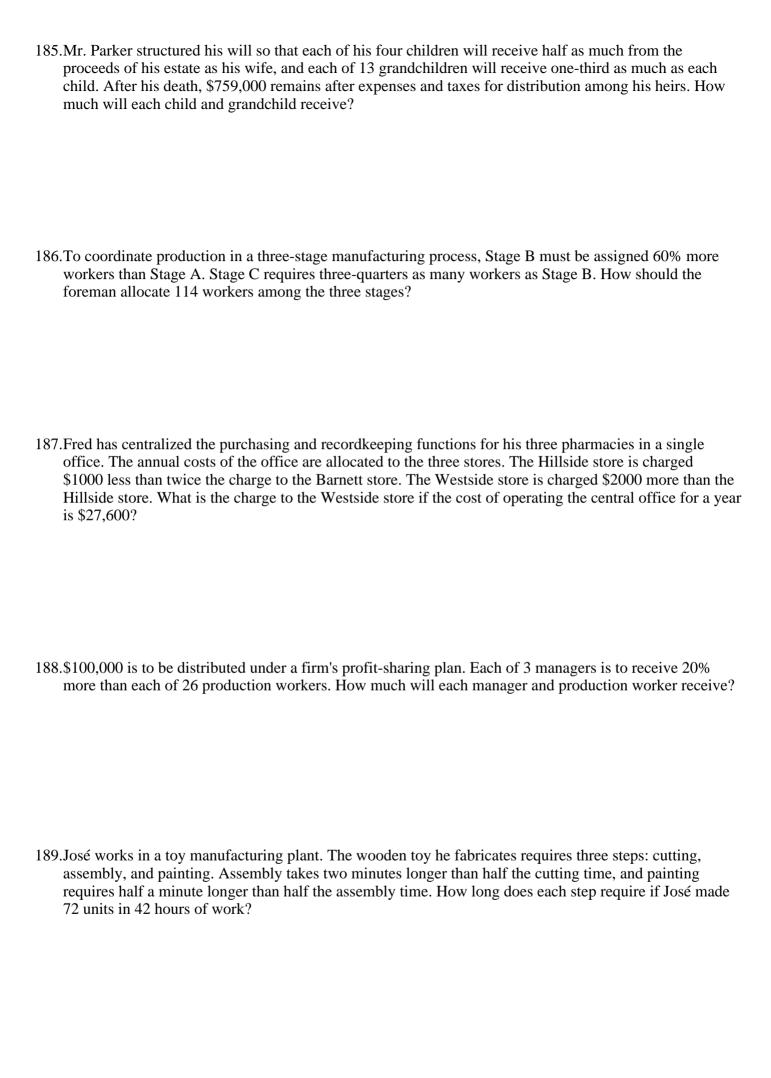
The regional government applies one tax rate to residences, and a lower tax rate to land with farm buildings. What are these property tax rates (expressed in percent to the nearest 0.01%)?

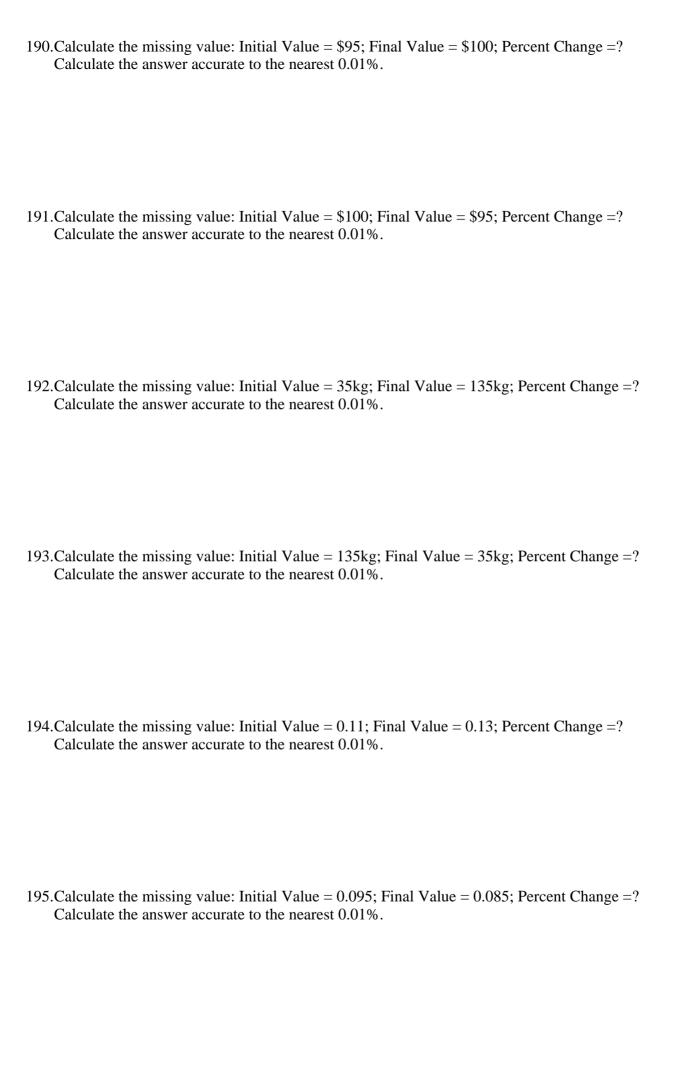
177. Product X requires 30 minutes of machining on a lathe, and product Y requires 45 minutes of machining. If the lathe was operated for 60.5 hours last week for machining a combined total of 93 units of Products X and Y, how many units of each product were produced?

178.Marichka bought 5 litres of milk and 4 dozen eggs for \$19.51. Lonnie purchased 9 litres of milk and 3 dozen eggs for \$22.98. What were the prices for a litre of milk and a dozen eggs?

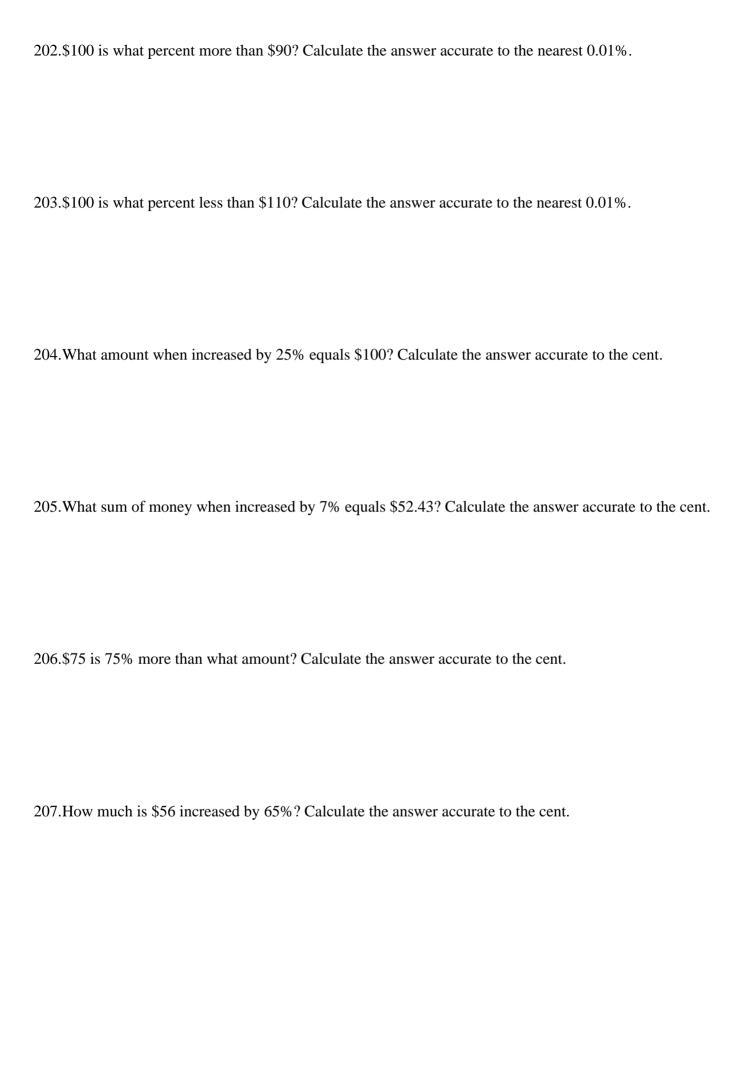
179. TinyTot School purchases the same amount of milk and orange juice each week. After price increases from \$1.50 to \$1.60 per litre of milk and from \$1.30 to \$1.37 per can of frozen orange juice, the weekly bill rose from \$57.00 to \$60.55. How many litres of milk and cans of orange juice are purchased every week?

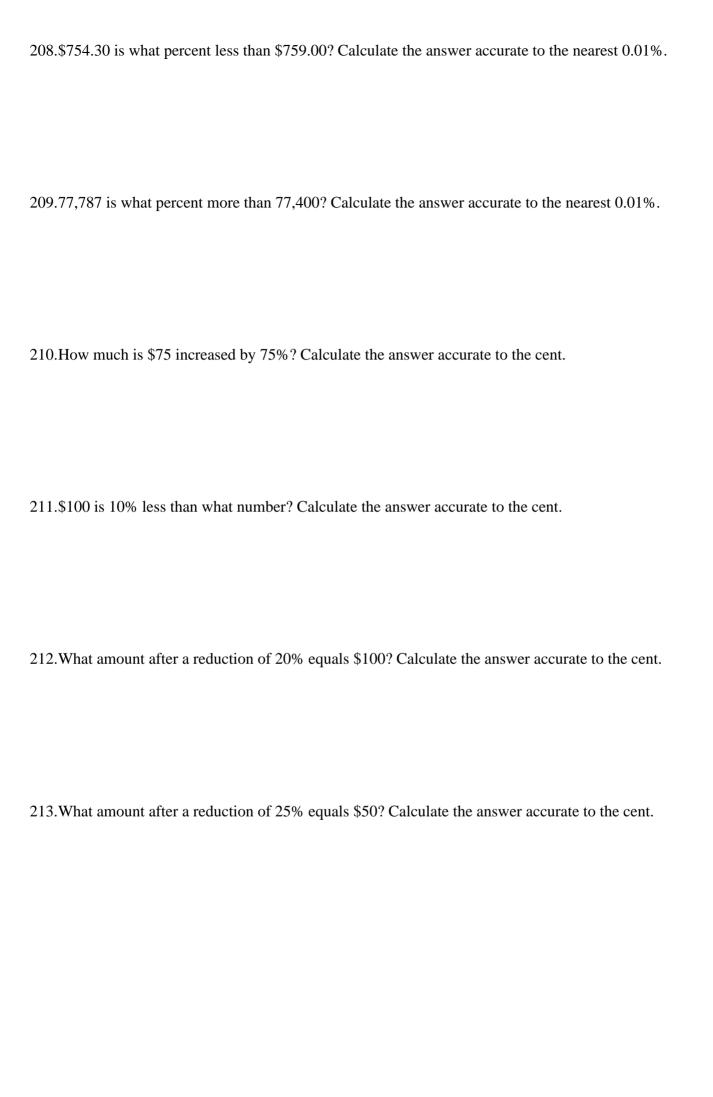


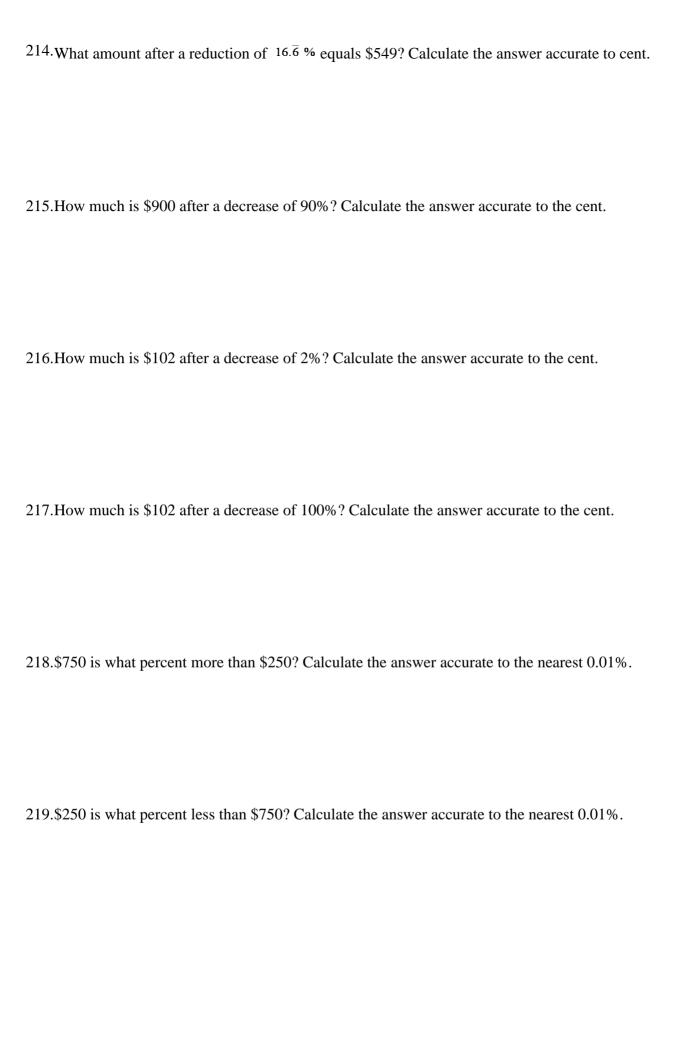






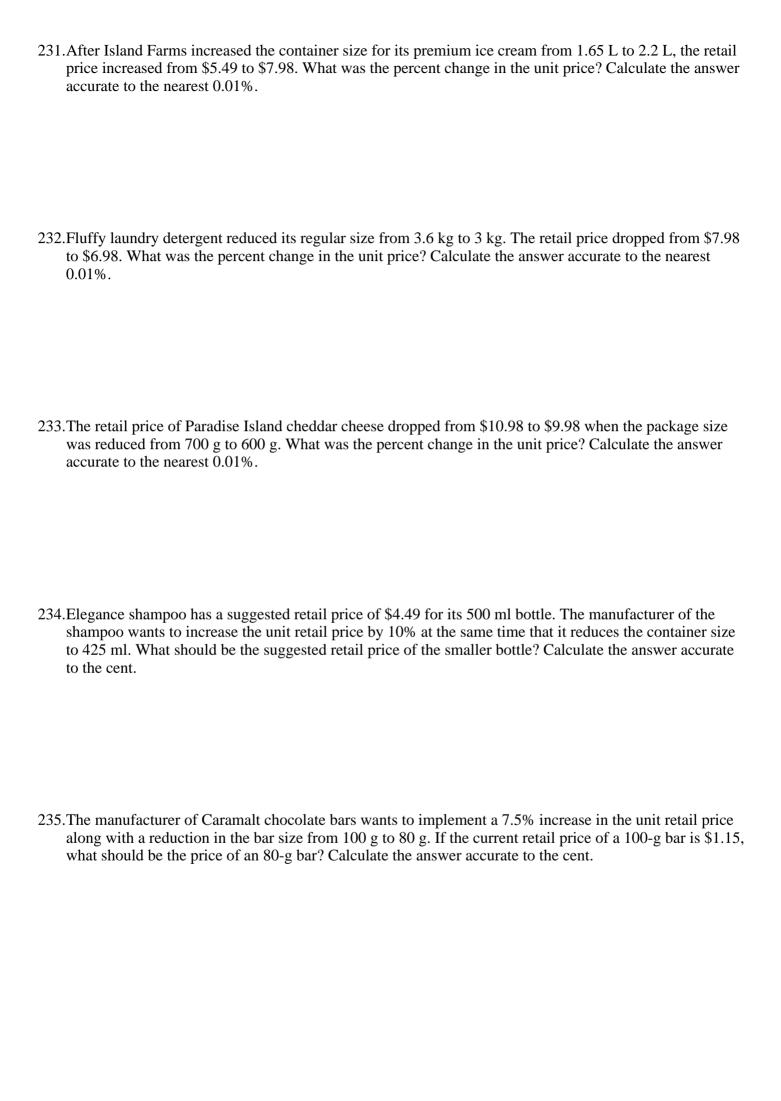


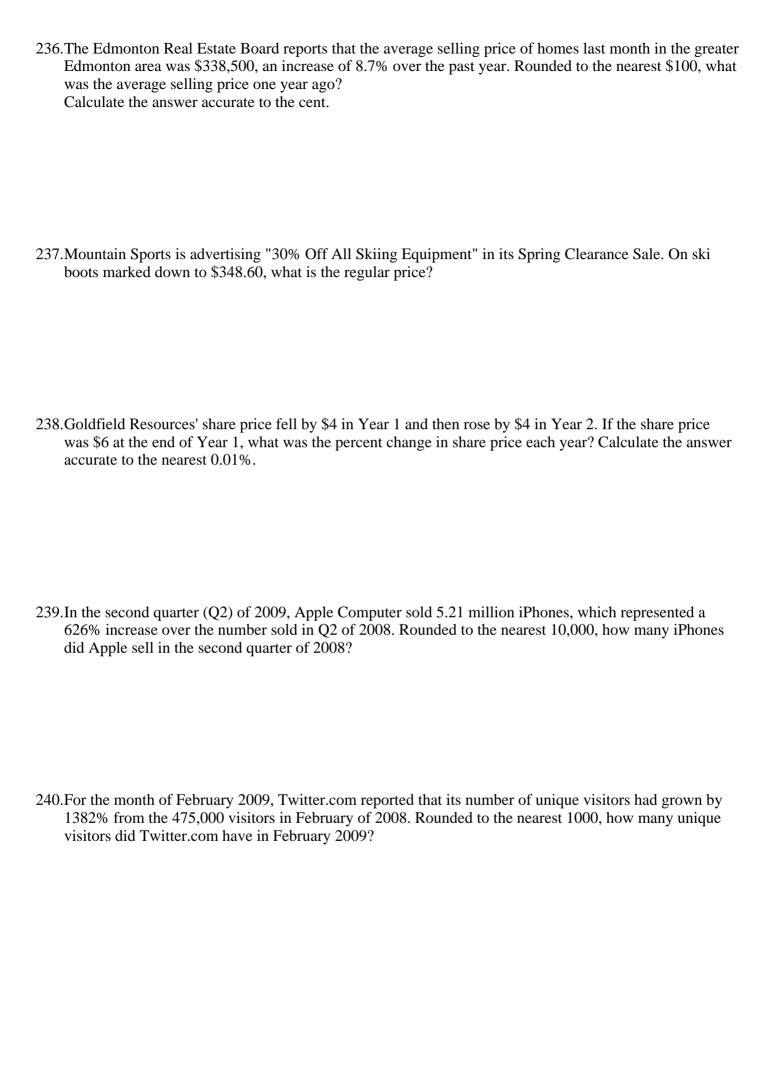




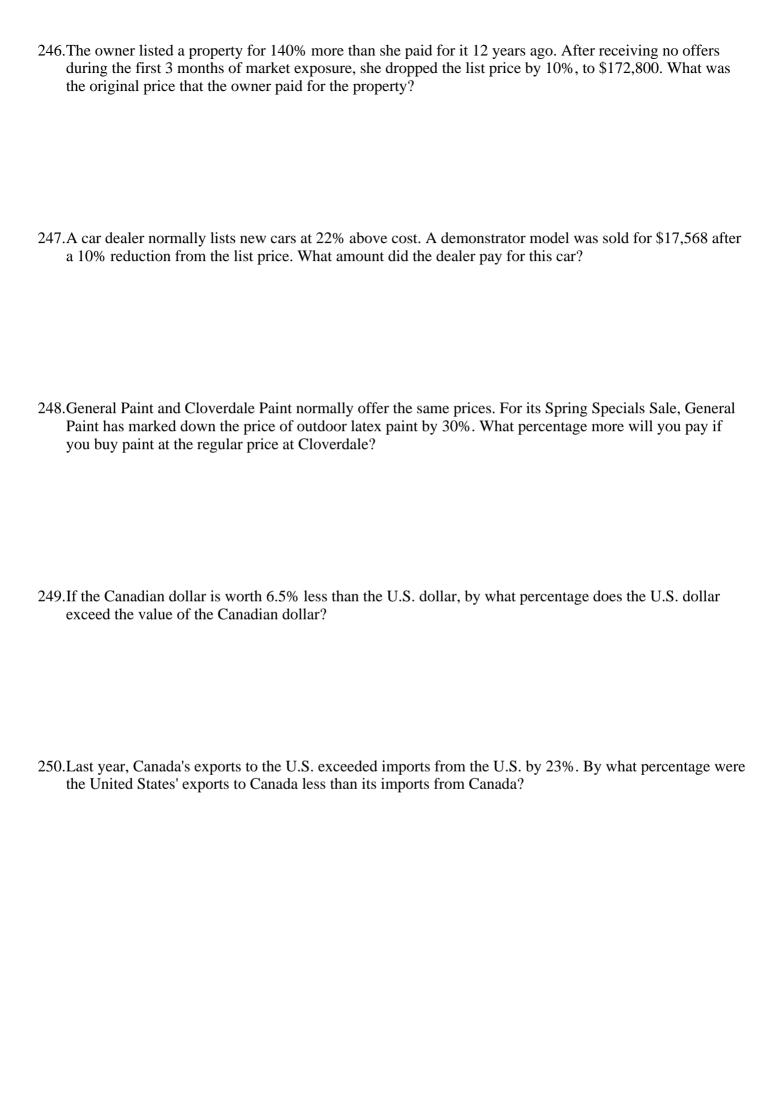
220.How much is \$10,000 increased by 34%? Calculate the answer accurate to the cent.
221. How much is \$1045 decreased by 0.5%? Calculate the answer accurate to the cent.
222. What amount when increased by 150% equals \$575? Calculate the answer accurate to the cent.
223. What amount after being increased by 210% equals \$465? Calculate the answer accurate to the cent.
224. How much is \$150 after an increase of 150%? Calculate the answer accurate to the cent.
225. The total cost of a coat, including GST and provincial sales tax totalling 14% of the ticket price, was \$283.86. What was the ticket price of the coat? Calculate the answer accurate to the cent.

226.On the purchase of a plasma TV, the total cost to the customer (including 6% GST and 7% PST) came to \$2822.74. How much GST and how much PST did the customer pay? Calculate the answer accurate to the cent.	
227.In 2009, Canada's population reached 33,710,000, a level that was 10.56% higher than ten years earlie Rounded to the nearest 10,000, what was the population figure for 1999?	r.
<ul><li>228.Becker Tools sold 32,400 hammers at an average price of \$15.10 in Year 1 and 27,450 hammers at an average price of \$15.50 in Year 2. What was the percent change from Year 1 to Year 2 in:</li><li>a. The number of hammers sold?</li><li>b. The average selling price?</li><li>c. The revenue from the sale of hammers?</li></ul>	
229.An investor purchased shares of Digger Resources at a price of \$0.55 per share. One year later, the shared at \$1.55, but they fell back to \$0.75 by the end of the second year after the date of purchase. Calculate the percent change in the share price accurate to the nearest 0.01%.:  a. In the first year  b. In the second year  c. Over both years	ures
230. What was the percent change in unit price when the regular size of Lily soap bars dropped from 100 g 90 g (with no change in the price per bar)? Calculate the answer accurate to the nearest 0.01%.	to

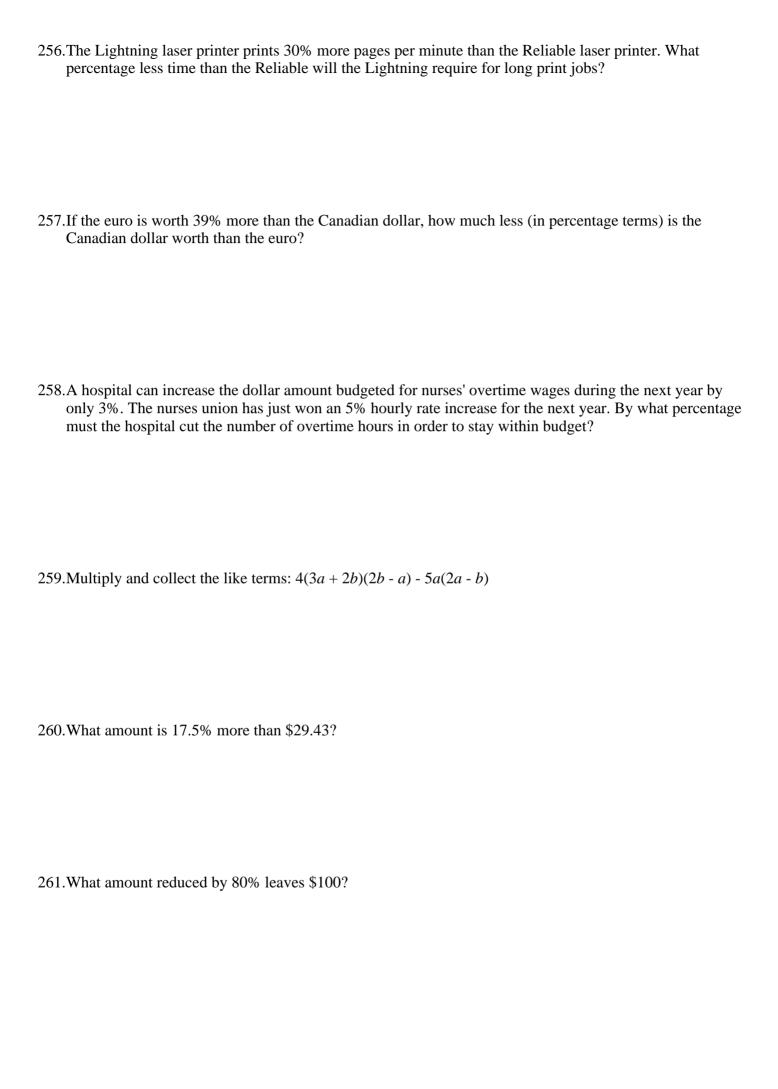


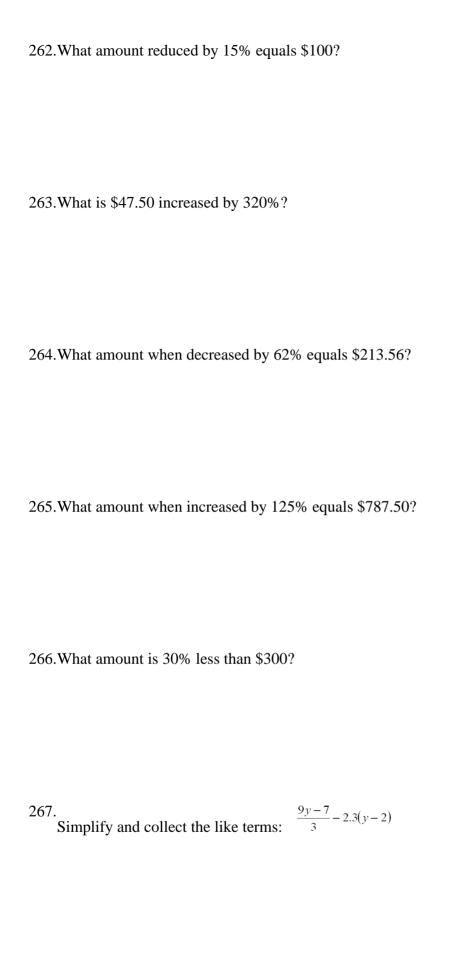


241.Mutual Fund A charges an annual management fee of 2.38% of money under management. The corresponding management fee for Mutual Fund B is 1.65%. On the same invested amount, what percentage more fees will you pay to Fund A than to Fund B?
242.In January of 2008, the federal government reduced the GST rate from 6% to 5%. What was the resulting percent reduction in the dollar amount of GST consumers paid on any item?
243.Facebook had 65,704,000 unique visitors in February of 2009. This number represented a 228.2% growth over the corresponding number for February 2008. Rounded to the nearest 10,000, what was the absolute increase, year-over-year, in the number of unique visitors?
244. The price of the shares of Nadir Explorations Ltd. fell by 76% in the past year, to the current price of \$0.45 per share. In dollars and cents, how much did the price of each share drop in the past year?
245.A piece of machinery has depreciated by 55% of its original purchase price during the past 4 years, to the current value of \$24,300. What is the dollar amount of the total depreciation during the last 4 years?



251.Sears reported that its sales in January were down 17.4% from its sales in December. What perce were December sales of January sales?	ntage
252.If the denominator of a fraction decreases by 20% and the numerator remains unchanged, by what percentage does the value of the fraction change?	ut
253.The Hampton District school board decided to reduce the number of students per teacher next yea 15%. If the number of students does not change, by what percentage must the number of teachers increased?	
254.If operating expenses are 40% of revenue, by what percentage does revenue exceed operating exp	penses?
255.A company has 50% less equity financing than debt financing. What percentage is the debt of the What percentage more debt financing does the company have than equity financing?	equity?





Simplify and collect the like terms:

$$P\left(1+0.095 \times \frac{135}{365}\right) + \frac{2P}{\left(1+0.095 \times \frac{75}{365}\right)}$$

269. Simplify and combine the like terms: 
$$6(4y - 3)(2 - 3y) - 3(5 - y)(1 + 4y)$$

Simplify and combine the like terms:

$$\frac{5b-4}{4} - \frac{25-b}{1.25} + \frac{7}{8}b$$

Simplify and combine the like terms: 
$$\frac{x}{1+0.085 \times \frac{63}{365}} + 2x \left(1+0.085 \times \frac{151}{365}\right)$$

## 272.

Simplify and combine the like terms:

$$\frac{96nm^2 - 72n^2m^2}{48n^2m}$$

Evaluate accurate to the cent: 
$$P(1+i)^n + \frac{S}{1+rt}$$
 for  $P = \$2500$ ,  $i = 0.1025$ ,  $n = 2$ ,  $S = \$1500$ ,  $r = 0.09$ , and  $t = \frac{93}{365}$ .

274. Evaluate accurate to the cent: 
$$L(1-d_1)(1-d_2)(1-d_3)$$
 for  $L=\$340$ ,  $d_1=0.15$ ,  $d_2=0.08$ ,  $d_3=0.05$ 

Evaluate accurate to the cent: 
$$\frac{\frac{R}{i}\left[1-\frac{1}{\left(1+i\right)^{n}}\right]}{\text{for } R=\$575, i=0.085, n=3}$$

276. Simplify: 
$$\frac{(-3x^2)^3(2x^{-2})}{6x^5}$$

277. 
$$\frac{\left(-2a^{3}\right)^{-2}\left(4b^{4}\right)^{3/2}}{\left(-2b^{3}\right)(0.5a)^{3}}$$

278. Simplify: 
$$\left(-\frac{2x^2}{3}\right)^{-2} \left(\frac{5^2}{6x^3}\right) \left(-\frac{15}{x^5}\right)^{-1}$$

281. Evaluate to six-figure accuracy: 
$$\frac{(1+0.0075)^{36}-1}{0.0075}$$

282. Evaluate to six-figure accuracy: 
$$\frac{1 - (1 + 0.045)^{-12}}{0.045}$$

283. Evaluate to six-figure accuracy: 
$$\frac{(1.00\overline{6})^{240}-1}{0.00\overline{6}}$$

284. Evaluate to six-figure accuracy: 
$$(1+0.025)^{1/3}-1$$

285. Solve for *x* to five-figure accuracy: 
$$\frac{2x}{1+0.13 \times \frac{92}{365}} + x \left(1+0.13 \times \frac{59}{365}\right) = \$831$$

286. Solve for *x* to five-figure accuracy: 
$$3x(1.03^5) + \frac{x}{1.03^3} + x = \frac{$2500}{1.03^2}$$

287. Solve for x to five-figure accuracy: 
$$\frac{x}{1.08^3} + \frac{x}{2}(1.08)^4 = \$850$$

288. Solve for x to five-figure accuracy: 
$$2x\left(1+0.085 \times \frac{77}{365}\right) + \frac{x}{\left(1+0.085 \times \frac{132}{365}\right)} = \$1565.70$$

289.Use formula (4-2) to calculate d2 if N = \$324.30, L = \$498, d1 = 0.20, and d3 = 0.075.

290.Use the formula Vf	= Vi(1+c1)(1+c2)(1+c2)	+ c3) to determine c	2 if Vf = \$586.64,	Vi = \$500, c1	= 0.17,
and $c3 = 0.09$ .					

291. Solve the following equations.

$$3x + 5y = 11$$
$$2x - y = 16$$

292. Solve each of the following pairs of equations to three-figure

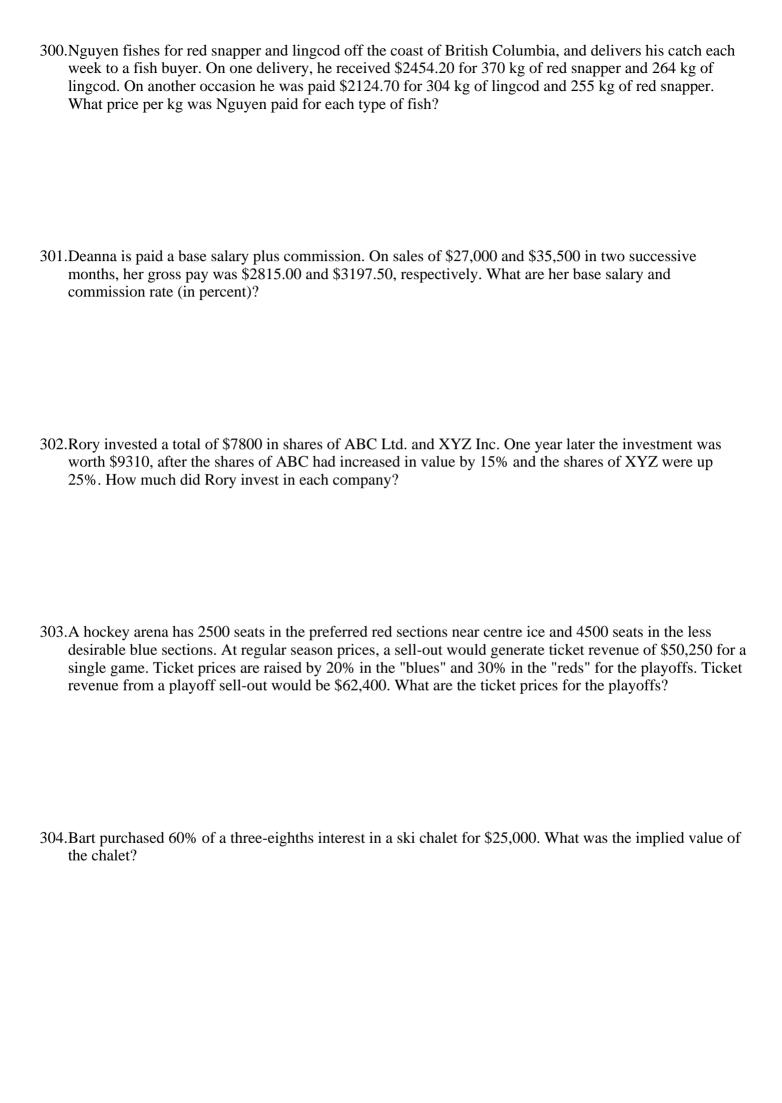
a)	4a - 5b = 30	
	2a - 6b = 22	
b)	76x - 29y = 1050	
	-213x - 63y = 250	

accuracy.

293. Rearrange the formula  $FV = PV(1 + i_1)(1 + i_2)$  to isolate  $i_1$ .

- 294. Yellowknife Mining sold 34,300 oz of gold in 1992 at an average price of \$320 per ounce. Production was down to 23,750 oz in 1993 because of a strike of the miners, but the average price obtained was \$360 per ounce. What was the percent change from 1992 to 1993 in:
  - a) The amount of gold produced?
  - b) The average selling price per ounce?
  - c) The revenue from the sale of gold?

295. Two years ago the shares of Diamond Strike Resources traded at a price of \$3.40 per share. One year late the shares were at \$11.50, but then they declined in value by 35% during the subsequent year. Calculate:  a) The percent change in the share price during the first year.  b) The current share price.
296.Barry recently sold some stock after holding it for 2 years. The stock rose 150% in price during the first year but fell 40% in the second year. At what price did he buy the stock if he sold it for \$24 per share?
<ul> <li>297. Albion Distributors' revenues and expenses for the fiscal year just completed were \$2,347,000 and \$2,189,000, respectively.</li> <li>a) If in the current year revenues rise by 10% but expense increases are held to 5%, what will be the percent increase in operating profit?</li> <li>b) If, instead, revenues decline by 10% and expenses are reduced by 5%, what will be the percent change in operating profit?</li> </ul>
298. The annual net income of the Todd Bros. partnership is distributed so that Ken receives \$15,000 more than 80% of Hugh's share. How should a net income of \$98,430 be divided between the partners?
299. The profits from a partnership are to be distributed so that Grace receives 20% more than Kajsa, and Mary Anne receives five-eighths as much as Grace. How much should each receive from a total distribution of \$36,000?



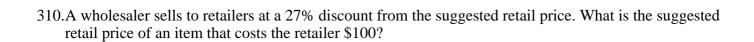
305. During a one-day special, a grocery store sells cucumbers at 98 cents each or four for the price of three. At the end of the day, the store's computer reports that revenue from the sale of 541 cucumbers was \$418.46. How many cucumbers were sold on the four-for-three promotion?

306. Simplify: 
$$\left(\frac{3a^3b^2}{a-b}\right)^4$$

307. Simplify: 
$$\left(\frac{3}{2x^2}\right)^2 \left(\frac{6x^3}{5^2}\right) \left(-\frac{x}{5}\right)^{-1}$$

308. 
$$\frac{(-2y)^3(x^4)^{-2}}{(x^{-2})^2(4y)^2}$$
 Simplify:

309. 
$$\underbrace{ \left[ \left( x^{1/3} \right) \left( x^{2/3} \right) x \right]^{3/2} }_{\left( 8x^3 \right)^{2/3}}$$
 Simplify: 
$$\underbrace{ \left( 8x^3 \right)^{2/3} }_{\left( 8x^3 \right)^{2/3}}$$



311. Simplify: 
$$2a - (-a) + 4a - 5a$$

312.Simplify: 
$$-4x - [-3x + 2(x-6)]$$

313. Evaluate: 
$$R\left[\frac{(1+i)^n-1}{i}\right]$$
 for  $R = \$1200$ ,  $i = 0.02$ ,  $n = 6$ 

314. Simplify: 
$$\frac{(2x^4y^2z^3)^2}{4xyz^2}$$

315. Simplify: 
$$x^7 \div x^{-4} \div x^3$$

Simplify:

317. Solve for the unknown variable: 
$$3(x-6)+5x-2(2x-3)=0$$

318. Solve for the unknown variable: 
$$9x+10=-3x+34$$

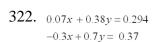
319. Solve for the unknown variable: 
$$1.5a + 3(4a - 6) = a(1.5)^2$$

320. Solve for the unknown variable: 
$$\frac{x}{(1.02)^6} + 3x(1.02)^4 - \$1000 = \frac{\$4000}{(1.02)^3}$$

$$\frac{x}{(1.02)^6} + 3x(1.02)^4 - \$1000 = \frac{\$4000}{(1.02)^3}$$

321. 
$$2x + 7y = -8$$

$$5x - 2y = 19$$



323. 
$$2y = 5x$$
  
 $3y - 5x = 0$ 

324. Surinder works in a retail store in Square One in Mississauga. She earns a base salary of \$320 per week, and a commission of 3% on sales over her quota of \$5000. If Surinder earned \$515 last week, what was the value of her sales?

325. Tickets for the end of semester dance sold for \$10 if purchased in advance, and \$15 if purchased at the door. If 392 tickets were sold for a total of \$4280, how many tickets were sold at the door?

326.Omar earns \$17.00 per hour for a forty-hour week. His overtime rate is 1 ½ times any hours exceeding forty in a week. If Omar earned \$807.50 last week, how many overtime hours did he work?

327.Mrs. Singh invested \$20,000 in two investments paying 2% and 3% respectively. She earned \$460 interest for the year. How much did Mrs. Singh invest at 3%?
328.Kristina is in charge of billing for a company that does computer training. She is preparing an invoice for \$1340 for 32 hours of work, which includes training at \$70 per hour and preparation of a manual at \$25 per hour. How many hours of training are included in the invoice?
329. How much is \$10 after an increase of 900%?
330.Manvir bought a stock for \$80 last week. Yesterday, the stock went up by 20%. Today it dropped by 20%. What is the current value of the stock?
331.Cliff just received a raise to \$18.45 per hour from \$18.00. What is the percent increase in his hourly rate?
332.If the CPI increases from 120.0 to 125.0 over a period, what is the percent increase in the CPI?

333.A coat is reduced by 30% to a sale price of \$45.99. What was the selling price of the coat?
334.Sales have increased by 10% over last year. What percentage less were last year's sales than this year's sales?
335.Madison found a sweater at a suburban discount mall for 25% less than at a store in downtown Toronto. What percentage more would she have paid if she bought the sweater in downtown Toronto?
336.If December sales were 30% more than November sales, by what percent are November sales less than December sales?
337.If operating expenses are 25% of revenue, by what percentage does revenue exceed operating expenses?
338.Wilfredo can do a task 35% faster than Kunal. What percentage less time than Kunal does Wilfredo take to do a task?

339. Simplify and collect like terms: -a + (2b - c) - (a - b + c)

A. 
$$-2a + 3b - 2c$$

B. 
$$-2a + b - 2c$$

D. 
$$-2a + 3b$$

E. 
$$-2a + 2b - 2c$$

340. Simplify and collect like terms: 1 - (3x - xy + y) - (-x + y - 5xy)

A. 
$$1 - 2x - 2y - 6xy$$

B. 
$$1 - 2x - 2y + 6xy$$

C. 
$$1 - 4x - 2y + 6xy$$

D. 
$$1 - 2x - 2y + 4xy$$

E. 
$$1 - 4x - 2y - 6xy$$

341. Simplify and collect like terms: 3(x - 2y)(2x + y)

A. 
$$6x^2 - 6xy - 6y^2$$

B. 
$$6x^2 + 10xy - 6y^2$$
  
C.  $6x^2 - 9xy - 6y^2$   
D.  $6x^2 - 9xy + 6y^2$   
E.  $6x^2 + 10xy + 6y^2$ 

C. 
$$6x^2 - 9xy - 6y^2$$

D. 
$$6x^2 - 9xy + 6y^2$$

E. 
$$6x^2 + 10xy + 6y^2$$

342. Simplify and collect like terms: 9x - [4y - 3(x - y)]

A. 
$$12 x + 7y$$

C. 
$$6x + 7y$$

343. Simplify and collect like terms:

$$4x + 5 - 2.1(x - 7)$$

C. 
$$2.6x + 15.325$$

E. 
$$-1.6x + 15.325$$

344.

Simplify and collect like terms: 
$$\frac{x}{5} + \frac{2}{5} - 0.7x^2 - \frac{3}{5}x + \frac{3}{4}$$
  
A.  $-0.7x^2 - .4x + 1.15$ 

**A.** 
$$-0.7x^2 - .4x + 1.15$$

**B.** 
$$0.7x^2 - .4x + 1.15$$

C. 
$$-0.7x^2 - .4x + .35$$

**D.** 
$$0.7x^2 - .4x + .35$$

E. 
$$-0.7x^2 + .8x + 1.15$$

345.

$$\frac{P}{1+0.07\times\frac{5}{12}}+2P(1+0.07\times\frac{4}{12})$$

Simplify and collect like terms:

Simplify and collect like terms:

- A. 2.957*x*
- B. 2.208*x*
- C. 3.057*x*
- D. 2.068x
- E. 1.983*x*

347.

$$\frac{12xy - 6y^2}{3y}$$

Simplify and collect like terms:

- A. 4x + 2y
- B. 4xy 2y
- C.  $4xy 2y^2$
- **D.** 4x 2y
- E.  $4xy 2y^2$

348.

$$\frac{10xy^2 - 15x^3y^2 + 25xy^4}{5xy}$$

Simplify and collect like terms:

- A.  $2y^2 3x^2y + 5y^3$
- **B.**  $2xy 3x^2y + 5y^3$
- C.  $2y 3x^2y + 5y$
- **D.**  $2y 3x^2 + 5y$
- E.  $2y 3x^2y + 5y^3$

349. Evaluate the following expression: 3x + 4y - 6xy, for x = 2, y = -3

- A. 30
- B. -42
- C. 54
- D. -18
- E. 24

350.

Evaluate the following expression: P(1+rt), for P = \$1575, r = .055,  $t = \frac{168}{365}$ 

- A. \$39.87
  - B. \$1614.87
  - C. \$1973.71
  - D. \$16,128
  - E. \$724.96

351. Simplify the following:  $a^2 \times a^6 \times a$ 

- A. a<sup>8</sup>
- B.  $a^7$
- C. a9
- D.  $a^{12}$
- E. a<sup>13</sup>

352. Simplify the following:  $(a^2)(a^{-6})(a^3)$ 

- A. a11
- **B**. *a*
- C.  $a^{-36}$
- D. a<sup>-1</sup>
- E.  $a^{-5}$

353. Simplify the following:  A. $b^4$ B. $b^{10}$ C. $b^{16}$ D. $b^{-6}$ E. $b^6$	$b^8 \div b^2$
354. Simplify the following:  A. $y^{13}$ B. $y^3$ C. $y^{-40}$ D. $y^{40}$ E. $y^{-13}$	$y^8 \div y^{-5}$
355. Simplify the following:  A. $x^9$ B. $x^{20}$ C. $x$ D. $x^{-1}$ E. $x^0$	$(x^5)^4$
356. Simplify the following:  A. $10x^{15}$ B. $32x^8$ C. $32x^{15}$ D. $2x^{15}$ E. $2x^8$	$(2x^3)^5$
357. Simplify the following:  A. $x^{-1}$ B. $x^{6}$ C. $x^{-2}$ D. $x^{7}$ E. $x^{2}$	$\frac{(x^5)(x)(x^{-3})}{x^{-4}}$
358. Simplify the following: A. $a^0$ B. $a$ C. $a^{-11}$ D. $a^{-5}$ E. $a^{-12}$	$\frac{(a^3)^{-2}}{a^6}$

359. Simplify the following:  A. $16a^{10}b^5$ B. $2a^{10}b^5$ C. $16a^3b^3$ D. $2a^5b^5$ E. $16a^5b^3$	
360. Simplify the following: $A = 5x^2$	$\left(\frac{4x}{2x^3}\right)^{-2} \left(\frac{3y^2}{2x^3}\right)^2 \left(\frac{3xy}{5x^3}\right)^{-1}$
Simplify the following:  A. $\frac{5x^2}{16y^3}$ B. $\frac{15x^3}{16y^3}$ C. $\frac{5x^3}{8y^2}$ D. $\frac{15x^3}{4y^3}$ E. $\frac{5x^2}{8y^2}$	$(2x)(2y^2)(5)$
361. Evaluate the following: A. 8.6 B. 37.5 C. 125 D. 5 E. 625	25 <sup>3/2</sup>
362. Evaluate the following: A. 32 B. 64 C64 D32 E. 10	$-16^{\frac{5}{4}}$
363. Evaluate the following: A. 14,857.17 B. 487.56 C. 3714.29 D. 60.945 E. 11.04	$\sqrt[4]{(121.89)^2}$
364.	$\frac{1.04^{10} - 1}{0.04}$
Evaluate the following: A. 12.006 B. 698.137 C. 1.201 D. 36.006 E. 35.58	0.04
365.	$\frac{1.055^6 - 1}{0.055}$
Evaluate the following:	0.055

Evaluate the following:

A. 233.95 B. 6.888 C. 0.689 D. 23.395 E. 23.763

366. Evaluate the following: A5.857 B10.446 C. 5.857 D. 0.5857 E. 13.485	$\frac{1 - 1.075^{-8}}{0.075}$
367.  Evaluate the following: A9.971 B22.579 C. 58.29 D. 9.971 E. 25.743	$\frac{1 - 1.056^{-15}}{0.056}$
368.  Evaluate the following:  A. $\frac{4}{3}$ B. $\frac{3}{4}$ C. $\frac{16}{3}$ D. $\frac{4}{9}$ E. 1	$\left(\frac{4}{3}\right)^2 \left(\frac{3}{4}\right)^{-3} \left(\frac{4}{3}\right)^{-5}$
369. The retail price of a swe of the sweater? A. \$115 B. \$70.84 C. \$64.40 D. \$96.60 E. \$100.63	ater is \$161.00, which includes a markup of 40% of cost. What is the cost price
370. The retail price of a pacl price of the CD?	kaged CD is \$60.00, which includes a markup of 150% of cost. What is the cost

371. The commission on a transaction is 3% of the first \$100,000 and 2% of the balance. What was the amount

of a transaction where the commission charged was \$10,100?

A. \$40B. \$24C. \$36D. \$20E. \$32

A. \$225,000 B. \$545,000 C. \$310,000 D. \$355,000 E. \$455,000

372.Sam has \$20,000 to invest. He invested part at 5% and part at 6%. His investments earned \$1120 total interest for the year. How much did Sam invest at each rate?  A. \$12,000; \$8000  B. \$10,000; \$10,000  C. \$6000; \$14,000  D. \$14,000; \$6000  E. \$8000; \$12,000
373. Anders has \$35,000 to invest. He invested part at 5.5% and part at 7%. His investments earned \$2195 total interest for the year. How much did Anders invest at each rate?  A. \$17,000; \$18,000  B. \$18,000; \$17,000  C. \$20,000; \$15,000  D. \$15,000; \$20,000  E. \$10,000; \$25,000
374.Tickets for the school play were \$3 for students and \$5 for all others. The box office sold 750 tickets for a total of \$3200. How many student tickets were sold?  A. 475 B. 275 C. 500 D. 250 E. 300
375.At a United Way fund raiser, students sold cinnamon buns for \$2 each or 3 for \$5. They sold 500 all together, and raised \$900. How many of the 3 for \$5 were sold?  A. 100  B. 200  C. 300  D. 250  E. 150
376.Stavros sells gold and green fabric in his drapery store. He buys the same quantity of both each quarter for \$18 per metre for the gold fabric and \$20 for the green fabric. His last order totalled \$2290. The supplier has advised Stavros that the gold fabric will increase by 20% and the green fabric by 25%, and his total order for the next quarter will be \$2813. How many metres of gold fabric does Stavros order each quarter?  A. 65  B. 56  C. 85  D. 55  E. 25
377. What was the percent change in unit price when a box of tissues dropped from 200 to 150 tissues per box? (with no change in the price per box)?  A. 25% B. 20% C. 30% D. 35% E. 33.3%
378. What was the percent change in unit price when a box of tissues dropped from 400 to 350 tissues per box? (with no change in the price per box)?  A. 12.5%  B. 15%  C. 17.5%  D. 11.7%  E. 14.3%

379. What is the percent change in unit price of a bag of cookies if the number of cookies per box is decreased by 15% (with no change in the price per bag)?  A. 17.6%  B. 15%  C. 20%  D. 10%  E. 11.1%
380.A loan company dropped the interest rate it charges on second mortgages from 9.5% to 7.9%. What percent reduction did this represent?  A. 16%  B. 16.8%  C. 1.6%  D. 20.3%  E. 15.7%
381.A loan company dropped the interest rate it charges on second mortgages from 8.7% to 7.3%. What percent reduction did this represent?  A. 1.4%  B. 19.2%  C. 16.1%  D. 14%  E. 15.6%
382.If the Canadian dollar is worth18% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar?  A. 15%  B. 18%  C. 24%  D. 21.95%  E. 20%
383.If the Canadian dollar is worth 22% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar?  A. 22%  B. 20%  C. 25.2%  D. 30.8%  E. 28.2%
384.A car dealer normally lists cars at 25% above cost. During a sale the manger offered a 10% reduction. If a car sold for \$20,812.50, what was the cost price to the dealership?  A. \$18,500  B. \$23,125  C. \$18,315  D. \$16,650  E. \$17,250
385.If the euro is worth 60% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro?  A. 40%  B. 37.5%  C. 62.5%  D. 45%  E. 55%

386. If the euro is worth 57% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro?

- A. 43%
- B. 63.7%
- C. 36.3%
- D. 42%
- E. 45%

387. Simplify: 8 - (2x + 4y - 3) - (4y + 10)

- A. -8y 2x + 21
- B. -8y 2x + 1
- C. -8y 2x 2
- D. -2x + 1
- E. -2x + 21

- 388.(5x 2y)(x 2y) =A.  $5x^2 12xy 4y^2$ B.  $5x^2 + 8xy 4y^2$ C.  $5x^2 12xy + 4y^2$ D.  $5x^2 8xy + 4y^2$ E.  $5x^2 + 12xy + 4y^2$

389.2(b-2) - (b-2) =

- A. b + 6
- B. 3b 2
- C. 3b + 2
- D. b 2
- E. b 6

390.Evaluate: -4(r - t) - (2r - 4t) for r = 1/2 and t = 1/4.

- A. 1
- B. 5
- C. 3
- D. -5
- E. -1

391.  $\frac{6a+9}{3} - 4(a-1) =$ 

- A. -2a + 13
  - B. -2a 1
  - C. -2a + 7
  - D. 2a + 7
  - E. 2a 1

392.Evaluate:  $L(1 - d_1)(1 - d_2)$  for L = \$1000,  $d_1 = 0.30$ , and  $d_2 = 0.20$ .

- A. \$440.00
- B. \$500.00
- C. \$1785.71
- D. \$560.00
- E. \$600.00

 $393._{2.48832}^{1/5} =$ 

- A. 95.396217
- B. 0.0104826
- C. 1.2
- D. 3.0
- E. 0.8333333

394. 
$$\frac{\left(\frac{r^3t^4}{t}\right)^3}{A. \ r^9t^4} =$$

$$A. \ r^9t^6$$

$$B. \ r^6t^6$$

$$C. \ r^6t^7$$

$$D. \ r^9t^{11}$$

$$E. \ r^9t^9$$

B. 
$$r^6 t^6$$

C. 
$$r^6t^7$$

D. 
$$r^9 t^{11}$$

E. 
$$r^9t^9$$

$$\begin{array}{c} 395. \ \ \frac{(r^9)^2(r^6)}{r^{12}} = \\ A. \ r^5 \end{array}$$

$$C_r^{12}$$

$$396.(8^2)(2^{-4})(-2)^2 =$$

Solve for x: 
$$2x + \frac{1}{8}x = x + 10$$

A. 
$$_{3\frac{1}{5}}$$

C. 
$$-3\frac{1}{5}$$

D. 
$$4\frac{12}{17}$$

398. Solve for x: 
$$2/3$$
 (x + 3) =  $-1/2$  (6x + 20) + 15

A. 
$$_{2\frac{5}{6}}$$

B. 
$$\frac{9}{11}$$

D. 
$$-2\frac{13}{22}$$

## 399.

Solve for x: 
$$-\left(\frac{1}{2}x-5\right) = 2x - 10$$

D. 
$$3\frac{1}{3}$$

- A. 13.9082
- B. 13.8996
- C. 14.8148
- D. 25.0000
- E. 225.0000
- 401. An employee earns \$1562.50 for 55 hours of work during last week. His regular workweek is 40 hours and he gets overtime at time and one-half the regular rate of pay. What is the regular hourly rate of pay?
  - A. \$37.50
  - B. \$28.41
  - C. \$42.61
  - D. \$58.59
  - E. \$25.00
- 402. The stock market index decreased this month by one-thirteenth of last month's index. If this month's index is 2400, what was last month's index?
  - A. 2585
  - B. 2320
  - C. 2483
  - D. 2600
  - E. 2215
- 403.A company laid off 80% of its work force. The number of employees after the layoff is 3000. How many employees were there before the layoff?
  - A. 5400
  - B. 7200
  - C. 3600
  - D. 15,000
  - E. 3750
- 404. John and Jill agree to form a partnership. The partnership agreement requires that John invests \$7000.00 less than one-half of what Jill is to invest. If the total investment of both is \$125,000.00, how much is Jill's investment?
  - A. \$88,000.00
  - B. \$37,000.00
  - C. \$78,666.67
  - D. \$46,333.33
  - E. \$74,393.33
- 405.If actual sales of \$18,000 were 36% of budgeted sales, what were the budgeted sales?
  - A. \$50,000
  - B. \$52,920
  - C. \$25,920
  - D. \$10,080
  - E. \$46,080
- 406. What number is 25% less than 96?
  - A. 120
  - B. 128
  - C. 384
  - D. 72
  - E. 125

407	0.51% of \$8500.00 = A. \$43,444.44 B. \$1663.04 C. \$43.44 D. \$166,304.35 E. \$434.44
408	A. \$63.00 B. \$243.00 C. \$117.00 D. \$514.29 E. \$276.92
409	What number is A. 218.75 B. 468.75 C. 133.33 D. 383.33 E. 31.25
410	After adding money?  A. \$43,987.50  B. \$44,009.78  C. \$2,000,000.00  D. \$46,035.81  E. \$20,000.00
411	.Susan is paid a 15% commission of her sales. If she earns a commission of \$3800, what was the amount of her sales?  A. \$44,705.88  B. \$25,333.33  C. \$4470.59  D. \$7030.00  E. \$3230.00
412	An item listed at 40% above cost was sold by a dealer during a special sale at a 15% reduction from the list price. What did the item cost the dealer if it was sold for \$23,765.00?  A. \$23,494.81  B. \$33,271.00  C. \$19,970.59  D. \$27,958.82  E. \$43,965.25
413	.After real estate fees of 3% had been deducted from the proceeds of the sale of a property, the real estate agent sent the vendor (seller) of the property \$244,400. What was the amount of fees retained by the real estate agent?  A. \$7558.76  B. \$251,958.76  C. \$7800.00  D. \$7118.45  E. \$237,281.55

<ul> <li>414.The retail price of an item is \$625.50. This includes a markup of three-quarters of the wholesale cost to the retailer. What is the wholesale cost?</li> <li>A. \$1094.63</li> <li>B. \$469.13</li> <li>C. \$834.00</li> <li>D. \$156.38</li> <li>E. \$357.43</li> </ul>
415.\$100 is what percent less than \$125?  A. 125%  B. 45%  C. 25%  D. 20%  E. 15%
416.What sum of money, increased by 7% equals \$187.25?  A. \$200.36  B. \$174.14  C. \$180.25  D. \$175.00  E. \$170.00
417.How much is 600 increased by 44% A. 840 B. 644 C. 864 D. 1,367 E. 788
418.What amount, when reduced by 60% equals \$840 A. \$336 B. \$900 C. \$1,680 D. \$1,400 E. \$2,100
419.After a 5.25% raise, Johnny earned \$19.28 per hour. What was his hourly rate before the raise?  A. \$18.27  B. \$18.32  C. \$20.26  D. \$18.78  E. \$10.11
420. The population of Enfield has increased by 36% over the last five years. If the current population is 89,244 what was it 5 years ago?  A. 65,621  B. 53,244  C. 19,182  D. 57,123  E. 70,377
421.How much is 50 increased by 300%?  A. 350  B. 300  C. 250  D. 200  E. 150

422.	What	percent	of 36	is	90?
T44.	v v mat	percent	01 50	10	<i>J</i> U:

- A. 150%
- B. 140%
- C. 175%
- D. 200%
- E. 250%

## 423.A retailer purchases merchandise at 25% below the suggested retail price. If the retailer pays \$375 for an item, what is the suggested retail price?

- A. \$468.75
- B. \$500.00
- C. \$525.00
- D. \$475.00
- E. \$450.00

#### 424. The share value of RipOff Technologies has dropped this year by 85%, to a new low of \$7.50 per share. How much money has been lost per share?

- A. \$42.50
- B. \$63.75
- C. \$8.82
- D. \$92.50
- E. \$15.00

## 425. During the last 30 years the price of gasoline has increased by 440%. If the current price per litre is \$0.589, what was it 30 years ago?

- A. \$0.201
- B. \$0.149
- C. \$0.134
- D. \$0.109
- E. \$0.037

- A. \$115,200
- B. \$632,800
- C. \$980,750
- D. \$1,125,000
- E. \$1,625,000

#### 427. Solve for x and y:

$$x + y = 40$$

$$-x + y = -20$$

A. 
$$x = 30$$
;  $y = 10$   
B.  $x = -10$ ;  $y = 30$ 

$$C_{xy} = 20$$
;  $xy = 10$ 

C. 
$$x = -30$$
;  $y = -10$ 

D. 
$$x = -60$$
;  $y = 20$ 

E. 
$$x = -60$$
;  $y = -20$ 

#### 428. Solve for x and y:

$$2x + 3y = 7$$

$$3x - y = 5$$

A. 
$$x = 6$$
;  $y = 2$ 

B. 
$$x = -2$$
;  $y = 1$ 

C. 
$$x = -2$$
;  $y = -1$ 

D. 
$$x = 2$$
;  $y = 1$ 

E. 
$$x = 2$$
;  $y = -1$ 

<ul> <li>429.The difference between two numbers is 42. If one-half of the larger number is three more than twice the smaller number, what are the two numbers?</li> <li>A12 and -54</li> <li>B. 12 and 54</li> <li>C. 16.0 and 58.0</li> <li>D. 11 and 31</li> <li>E12.5 and 29.5</li> </ul>
430. Solve for x and y in the following pair of equations: y = -0.2x + 4.2 x - 0.5y = 10 A. $x = 11$ ; $y = 2$ B. $x = 2$ ; $y = 11$ C. $x = 11$ ; $y = 6.4$ D. $x = 6.45$ ; $y = 2.9$ E. $x = 6.4$ ; $y = 11$
431. Evaluate to six-figure accuracy: 0.893 <sup>-1/2</sup>
432. Simplify and collect like terms: $(-p) + (-3p) + (4p)$
433. Simplify and collect like terms: $(5s - 2t) - (2s - 4t)$
434. Simplify and collect like terms: $4x^2y + (-3x^2y) - (-5x^2y)$

435. Simplify and collect like terms:  $1 - (7e^2 - 5 + 3e - e^3)$ 

436. Simplify and collect like terms:  $(6x^2 - 3xy + 4y^2) - (8y^2 - 10xy - x^2)$ 

437. Simplify and collect like terms:  $(7m^3 - m - 6m^2 + 10) - (5m^3 - 9 + 3m - 2m^2)$ 

438. Simplify and collect like terms: 2(7x - 3y) - 3(2x - 3y)

439. Simplify and collect like terms:  $4(a^2 - 3a - 4) - 2(5a^2 - a - 6)$ 

440. Simplify and collect like terms: 15x - [4 - 2(5x - 6)]



Simplify and collect like terms: 
$$\frac{2x+9}{4}-1.2(x-1)$$

443. Simplify and collect like terms: 
$$\frac{x}{2} - x^2 + \frac{4}{5} - 0.2x^2 - \frac{4}{5}x + \frac{1}{2}$$

444. Simplify and collect like terms: 
$$\frac{8x}{0.5} + \frac{5.5x}{11} + 0.5(4.6x - 17)$$

Simplify, collect like terms and maintain 5-figure accuracy: 
$$\frac{2x}{1.045} - \frac{2.016x}{3} + \frac{x}{2}$$

446. Simplify, collect like terms and maintain 5-figure accuracy: 
$$\frac{P}{1+0.095 \times \frac{5}{12}} + 2P \left(1+0.095 \times \frac{171}{365}\right)$$

Simplify, collect like terms and maintain 5-figure accuracy:

$$y \left(1 - 0.125 \times \frac{213}{365}\right) + \frac{2y}{\left(1 + 0.125 \times \frac{88}{365}\right)}$$

Simplify, collect like terms and maintain 5-figure accuracy:

$$k(1+0.04)^2 + \frac{2k}{(1+0.04)^2}$$

Simplify, collect like terms and maintain 5-figure accuracy:  $\frac{h}{(1+0.055)^2} - 3h(1+0.055)^3$ 

$$\frac{h}{1+0.055)^2} - 3h(1+0.055)^3$$

450.Perform the operation indicated and collect like terms: 4a(3ab - 5a + 6b)

451.Perform the operation indicated and collect like terms:  $9k(4 - 8k + 7k^2)$ 

452.Perform the operation indicated and collect like terms:  $-5xy(2x^2 - xy - 3y^2)$ 

454.Perform the operation indicated and collect like terms: (4r - 3t)(2t + 5r)

455.Perform the operation indicated and collect like terms:  $(3p^2 - 5p)(-4p + 2)$ 

456.Perform the operation indicated and collect like terms: 3(a-2)(4a+1)-5(2a+3)(a-7)

457. Perform the operation indicated and collect like terms: 5(2x - y)(y + 3x) - 6x(x - 5y)

458. Perform the operation indicated and collect like terms:  $\frac{18x^3}{3x}$ 

Perform the operation indicated and collect like terms:

$$\frac{x^2y - xy^2}{xy}$$

461. Perform the operation indicated and collect like terms:  $\frac{-4x+10x}{-0}$ 

462. Perform the operation indicated and collect like terms:  $\frac{12x^3 - 24x^2 + 36x}{48x}$ 

463. Perform the operation indicated and collect like terms:  $\frac{32a^2b - 8ab + 14ab^2}{2ab}$ 

465.

$$\frac{120(1+i)^2 + 180(1+i)^3}{360(1+i)}$$

Perform the operation indicated and collect like terms:

466. Evaluate the following expression for the given value of the variable:  $3d^2 - 4d + 15$  for d = 2.5

467. Evaluate the following expression for the given value of the variable: 15g - 9h + 3 for g = 14, h = 15

468. Evaluate the following expression for the given value of the variable: 7x(4y - 8) for x = 3.2, y = 1.5

469. Evaluate the following expression for the given value of the variables:  $I \div Pr$  for P = \$500, I = \$13.75, r = 0.11

470.

471.

Evaluate the following expression for the given value of the variables and calculate to the cent:  $\frac{N}{1-d}$  for N = \$89.10, d = 0.10

472. Evaluate the following expression for the given value of the variable sand calculate to the cent:  $L(1-d_1)(1-d_2)(1-d_3)$  for L = \$490,  $d_1 = 0.125$ ,  $d_2 = 0.15$ ,  $d_3 = 0.05$ 

473. Evaluate the following expression for the given value of the variables and calculate to the cent: P(1+rt) for P = \$770, r = 0.13,  $t = \frac{223}{365}$ 

474.

Evaluate the following expression for the given value of the variables and calculate to the cent:  $\frac{S}{1+rt}$  for S = \$2500, r = 0.085,  $t = \frac{123}{365}$ 

Evaluate the following expression for the given value of the variables and calculate to the cent:  $P(1+i)^n$  for P = \$1280, i = 0.025, n = 3

Evaluate the following expression for the given value of the variables and calculate to the cent: for S = \$850, i = 0.0075. n = 6

478. Evaluate the following expression for the given value of the variables and calculate to the cent:  $R\left[\frac{(1+i)^n-1}{i}\right]$  for R=\$550, i=0.085, n=3

479. Evaluate the following expression for the given value of the variables and calculate to the cent:  ${R \left[ \frac{(1+i)^n - 1}{i} \right]} (1+i)$  for R = \$910, i = 0.1038129, n = 4

480. Evaluate the following expression for the given value of the variables and calculate to the

cent: 
$$\frac{R}{i} \left[ 1 - \frac{1}{(1+i)^n} \right]$$
 for  $R = \$630, i = 0.115, n = 2$ 

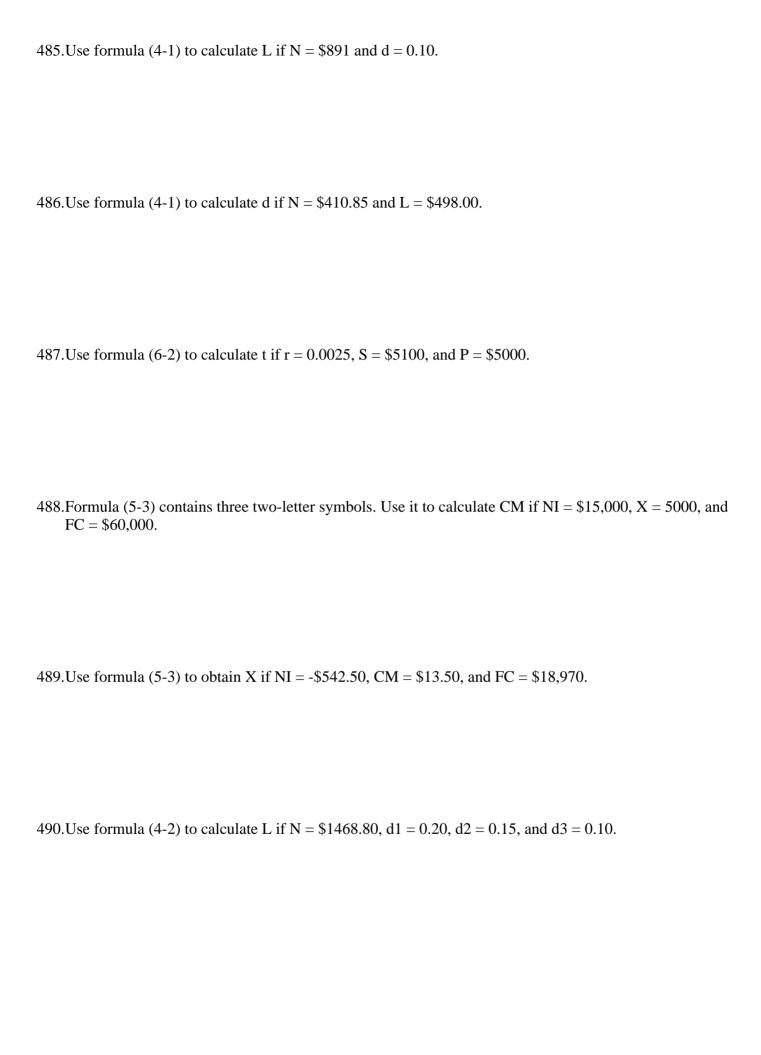
481. Evaluate the following expression for the given value of the variables and calculate to the cent:  $P(1+rt_1)$  +  $\frac{S}{1+rt_2}$  for P = \$470, S = \$390, r = 0.075,  $t_1 = \frac{104}{365}$ ,  $t_2 = \frac{73}{365}$ 

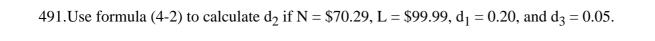
+ 
$$\frac{S}{1+rt_2}$$
 for  $P = \$470$ ,  $S = \$390$ ,  $r = 0.075$ ,  $t_1 = \frac{104}{365}$ ,  $t_2 = \frac{73}{365}$ 

482.Use formula (6-1) to calculate P if r = 0.05, i = \$6.25, and t = 0.25.

483.Use formula (13-1) to calculate i if PMT = \$900 and PV = \$150,000. (There are several instances in our formulas where a two- or three-letter symbol is used for a variable. This is usually done to make the symbol more suggestive of the quantity it represents. For example, we use PMT to represent the amount of each payment in a series of regular payments. The symbol P has already been taken to represent another quantity that begins with "p.")

484.Use formula (6-2) to calculate P if r = 0.004, S = \$3626, and t = 9.





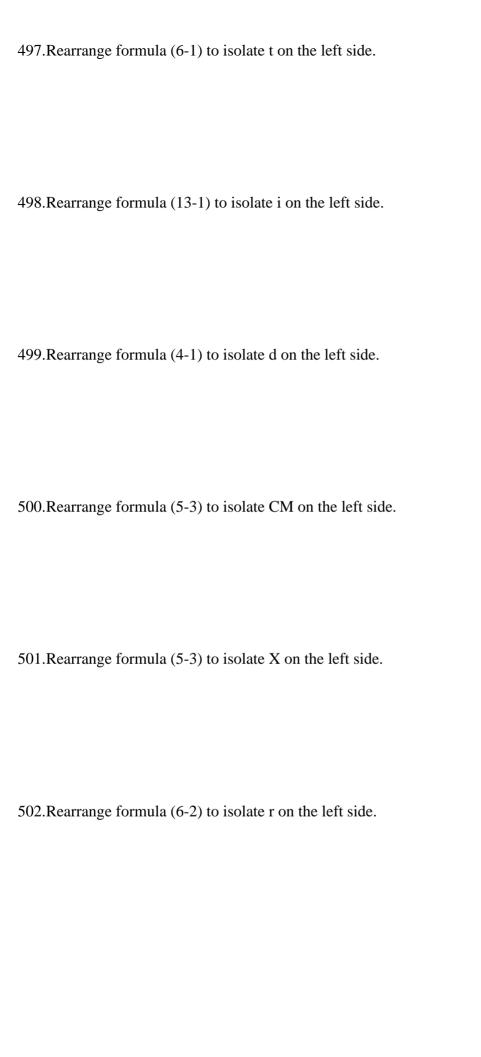
492.Use the formula  $FV = PV(1 + i_1)(1 + i_2)(1 + i_3)$  to determine  $i_1$  if PV = \$1000, FV = \$1094.83,  $i_2 = 0.03$ ,  $i_3 = 0.035$ .

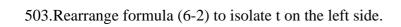
493.Use formula (10-1) to obtain PMT if FV = \$1508.54, n = 4, and i = 0.05.

494. Use formula (10-2) to obtain PMT if PV = \$6595.20, n = 20, and i = 0.06.

495.Use the formula  $FV = PV(1 + i)^n$  to calculate i if PV = \$2000, FV = \$9321.91, and n = 20.

496.Use the formula  $PV = FV(1 + i)^{-n}$  to calculate i if PV = \$5167.20, FV = \$10,000, and n = 15.





504. Rearrange formula (4-2) to isolate d1 on the left side.

505.Rearrange formula (4-2) to isolate d3 on the left side.

506. Rearrange the formula  $FV = PV(1 + i)^n$  to isolate PV on the left side.

507. Rearrange the formula  $FV = PV(1 + i)^n$  to isolate i on the left side.

508. Simplify:  $a^2 \times a^3$ 

509. Simplify:  $(x^6)(x^{-4})$ 

510. Simplify:  $b^{10} \div b^6$ 

511. Simplify:  $h^7 \div h^{-4}$ 

512. Simplify:  $(1+i)^4 \times (1+i)^9$ 

513. Simplify:  $(1+i) \times (1+i)^n$ 

514. Simplify:  $(x^4)^7$ 

515. Simplify: 
$$(y^3)^3$$

Simplify: 
$$(t^6)^{1/3}$$

517. Simplify: 
$$\binom{n^{0.5}}{}^{8}$$

518. 
$$\underbrace{\left(x^{5}\right)\left(x^{6}\right)}_{x^{9}}$$
 Simplify: 
$$\frac{\left(x^{5}\right)\left(x^{6}\right)}{x^{9}}$$

519. 
$$\frac{(x^5)^6}{x^9}$$

520. Simplify: 
$$[2(1+i)]^2$$

521. Simplify: 
$$\left(\frac{1+i}{3i}\right)^3$$

522. 
$$\frac{4r^5t^6}{(2r^2t)^3}$$

523. 
$$\frac{(-r^3)(2r)^4}{(2r^{-2})^2}$$

525. Evaluate to six-figure accuracy: 
$$(-27^{2/3})$$

Evaluate to six-figure accuracy:	7 <sup>3/2</sup>
527. Evaluate to six-figure accuracy:	5 <sup>-3/4</sup>
528. Evaluate to six-figure accuracy:	(0.001) <sup>-2</sup>
529. Evaluate to six-figure accuracy:	(1.0085) <sup>5</sup> (1.0085) <sup>3</sup>
530. Evaluate to six-figure accuracy:	(1.005) <sup>3</sup> (1.005) <sup>-6</sup>
531. Evaluate to six-figure accuracy:	<sup>3</sup> √1.03

 $\left(4^{4}\right)\left(3^{-3}\left(-\frac{3}{4}\right)^{3}$ Evaluate to six-figure accuracy:

 $\left[\left(-\frac{3}{4}\right)^2\right]^{-2}$ Evaluate to six-figure accuracy:

# 535.

Evaluate to six-figure accuracy:  $\left(\frac{2}{3}\right)^3 \left(-\frac{3}{2}\right)^2 \left(-\frac{3}{2}\right)^{-3}$ 

# 536.

 $\left(-\frac{2}{3}\right)^3 \div \left(\frac{3}{2}\right)^{-2}$ 

Evaluate to six-figure accuracy:

537.

$$1.03^{16} - 1$$

Evaluate to six-figure accuracy:

538.

$$\frac{\left(\!1.008\overline{3}\right)^{\!30}-\!1}{0.008\overline{3}}$$

Evaluate to six-figure accuracy:

Evaluate to six-figure accuracy:

540.

$$\frac{1-(1.00\overline{6})^{-32}}{1.00\overline{6}}$$

541. Evaluate to six-figure accuracy:  $(1+0.0275)^{1/3}$ 

542. Evaluate to six-figure accuracy:  $(1+0.055)^{1/6}-1$ 

543. Solve the following equation: 10a + 10 = 12 + 9a

544. Solve the following equation: 29 - 4y = 2y - 7

545. Solve the following equation: 0.5(x - 3) = 20

546. Solve the following equation:  $\frac{1}{3}$  (x - 2) = 4

547. Solve the following equation: y = 192 + 0.04y

548. Solve the following equation: x - 0.025x = 341.25

549. Solve the following equation: 12x - 4(2x - 1) = 6(x + 1) - 3

550. Solve the following equation: 3y - 4 = 3(y + 6) - 2(y + 3)

551. Solve the following equation: 8 - 0.5(x + 3) = 0.25(x - 1)

552. Solve the following equation: 5(2 - c) = 10(2c - 4) - 6(3c + 1)

553. Solve the following equation: 3.1t + 145 = 10 + 7.6t

554. Solve the following equation: 1.25y - 20.5 = 0.5y - 11.5

Solve the following equation accurate to the cent:  $\frac{x}{1.1^2} + 2x(1.1)^3 = \$1000$ 

$$\frac{x}{1.1^2} + 2x(1.1)^3 = $1000$$

Solve the following equation accurate to the cent:  $\frac{3x}{1.025^6} + x(1.025)^8 = \$2641.35$ 

$$\frac{3x}{1.025^6} + x(1.025)^8 = $2641.35$$

## 557.

Solve the following equation accurate to the cent: 
$$\frac{2x}{1.03^7} + x + x \left(1.03^{10}\right) = \$1000 + \frac{\$2000}{1.03^4}$$

Solve the following equation accurate to the cent:  $x(1.05)^3 + $1000 + \frac{x}{1.05^7} = \frac{$5000}{1.05^2}$ 

$$x(1.05)^3 + 1000 + \frac{x}{1.05^7} = \frac{1000}{1.05^2}$$

Solve the following equation accurate to the cent:

$$x\left(1+0.095 \times \frac{84}{365}\right) + \frac{2x}{\left(1+0.095 \times \frac{108}{365}\right)} = \$1160.20$$

Solve the following equation accurate to the cent:

$$\frac{x}{1 + 0.115 \times \frac{78}{365}} + 3x \left(1 + 0.115 \times \frac{121}{365}\right) = \$1000 \left(1 + 0.115 \times \frac{43}{365}\right)$$

561. Solve the following pair of equations. Verify your solution.

$$x - y = 2$$
$$3x + 4y = 20$$

562. Solve the following pair of equations. Verify your solution.

$$y - 3x = 11$$
$$5x + 30 = 4y$$

563. Solve the following pair of equations. Verify your solution.

$$4a - 3b = -3$$
  
 $5a - b = 10$ 

564. Solve the following pair of equations. Verify your solution.

$$7p - 3q = 23$$
  
 $-2p - 3q = 5$ 

$$565.7x - y = 35$$

Solve the following pair of equations. Verify your solution.

$$y = 2x$$

566. Solve the following pair of equations. Verify your solution.

$$g - h = 17^{\frac{4}{3}g + \frac{3}{2}h = 0}$$

567. Solve the following pair of equations to three-figure accuracy. Verify your solution. d = 3c - 5000.7c + 0.2d = 550

568. Solve the following pair of equations to three-figure accuracy. Verify your solution. 0.03x + 0.05y = 510.8x - 0.7y = 140

569. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$2v + 6w = 1$$
  
-9w + 10v = 18

570. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$2.5a + 2b = 11$$

$$8a + 3.5b = 13$$

571. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$37x - 63y = 235$$
$$18x + 26y = 468$$

572. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$68.9n - 38.5m = 57$$
  
 $45.1n - 79.4m = -658$ 

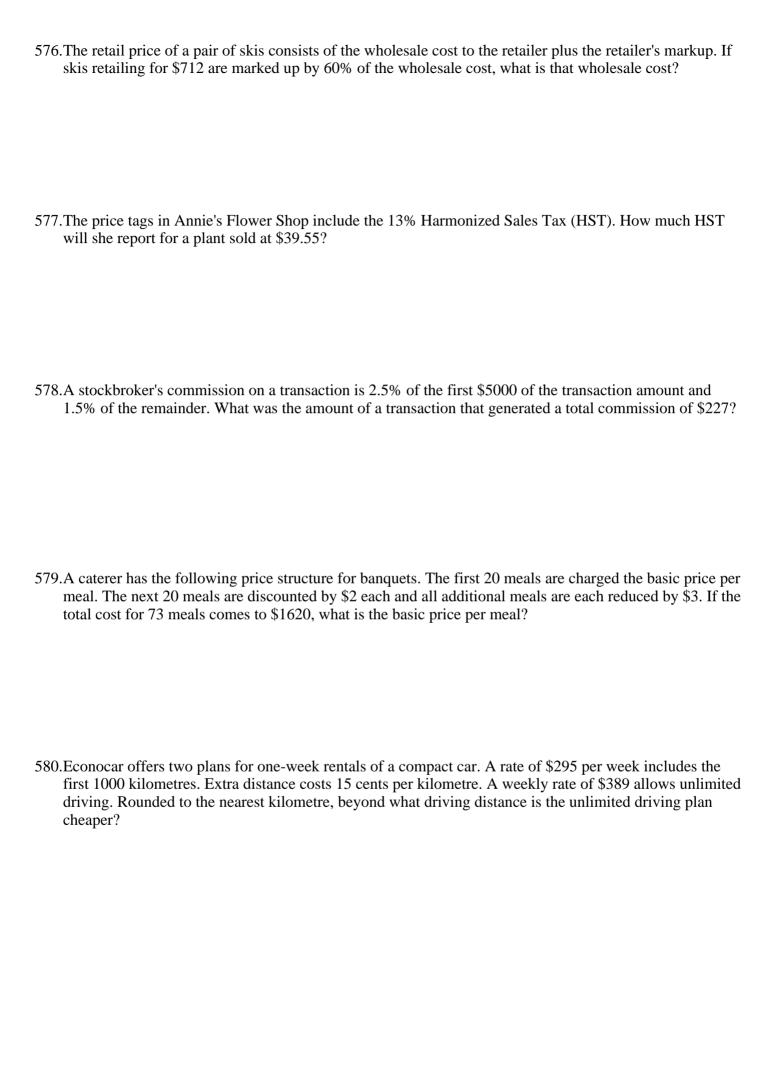
573. Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$0.33e + 1.67f = 292$$
  
 $1.2e + 0.61f = 377$ 

574. Solve the following pair of equations. Verify your solution.

$$318j - 451k = 7.22$$
  
 $-249j + 193k = -18.79$ 

575.A web site had 2/7 more hits last month than in the same month of the preceding year. If there were 2655 hits last month, how many were there 1 year earlier?



times her base wage of \$23.50 per hou	Iditional earnings. She has an opportunity to work overtime at 1.5 ar. Rounded to the nearest quarter hour, how much overtime must tax) to buy a canoe that costs \$2750 including sales taxes?
three-bedroom homes in a subdivision,	ence that there should be 40% as many two-bedroom homes as a, and twice as many two-bedroom homes as four-bedroom homes. Classic build in a new 96-home subdivision?
60% as much on television advertising	as much on radio advertising as on newspaper advertising, and g as on radio advertising. If next year's total advertising budget is nearest dollar) should be allocated to each form of advertising?

# ch02 Key

1.0

$$2.3s + 2t$$

 $3.6x^2y$ 

$$4. e^3 - 7e^2 - 3e + 6$$

$$5. 7x^2 + 7xy - 4y^2$$

6. 
$$2m^3 - 4m^2 - 4m + 19$$

7.8x + 3y

$$10. a + 4b$$

11. 
$$-0.7x + 3.45$$

12. 
$$-1.2x^2 -0.3x + 1.3$$

19. 
$$12a^2b - 20a^2 + 24ab$$

20. 
$$36k - 72k^2 + 63k^3$$

$$21. -10x^3y + 5x^2y^2 + 15xy^3$$

22. 
$$-2pq + 8q^2 + 10q$$

$$24. -12p^3 + 26p^2 - 10p$$

$$25. 2a^2 + 34a + 99$$

$$26.\ 24x^2 + 25xy - 5y^2$$

27. 6x

$$-3\frac{a}{b}$$

$$30.8 - 20x + 12x^2$$

$$\frac{x^2 - 2x + 3}{4}$$

$$\frac{2(1+i)+3(1+i)^2}{6}$$

34.

35. 23.75

36. 78

37. -44.8

38. 0.250

39. \$315.11

40. \$99.00

41. \$346.22

42. \$776.12

43. \$2430.38

44. 0.093083

45. \$1378.42

46. \$812.73

47. \$1794.22

48. \$4687.97

49. \$1071.77

50. \$864.28

51. \$500.00

52. 0.00600

53. \$3500.00

54. \$9900.00

55. 0.175

56. 8.00

57. \$15.00

58. 1365

59. \$2400.00

60. 0.0750

61. 0.0270

62. \$350.00

63. \$575.00

64. 0.0800

65. 0.0450

 $t = \frac{I}{\text{Pr}}$ 

 $i = \frac{PMT}{PV}$ 

$$d = 1 - \frac{N}{L}$$
 68.

$$69. \quad CM = \frac{NI + FC}{X}$$

$$X = \frac{NI + FC}{CM}$$

71. 
$$r = (S - P)/Pt$$

72. 
$$t = (S - P) / \Pr$$

73. 
$$d_{1}=1-\frac{N}{L(1-d_{2})(1-d_{3})}$$

74. 
$$d_3 = 1 - \frac{N}{L(1 - d_1)(1 - d_2)}$$

75. 
$$PV = FV(1+i)^{-n}$$

$$i = \left(\frac{FV}{PV}\right)^{1/n} - 1$$

- 77. a<sup>5</sup>
- 78.  $x^2$
- 79. b<sup>4</sup>
- 80. h<sup>11</sup>

81. 
$$(1+i)^{13}$$

82. 
$$(1+i)^{n+1}$$

- 83. x<sup>28</sup>
- 84. y<sup>9</sup>
- 85. t<sup>2</sup>
- 86. n<sup>4</sup>
- 87. x<sup>2</sup>
- 88. x<sup>21</sup>

89. 
$$4(1+i)^2$$

90. 
$$\frac{(1+i)^3}{27i^3}$$

$$\frac{t^3}{2n}$$

- 92. -4r<sup>11</sup>
- 93. 16
- 94. -9
- 95. 18.5203
- 96. 0.299070

- 97. 1,000,000
- 98. 1.05822
- 99. 1.07006
- 100. 0.985149
- 101. 1.00990
- 102. 1.00816
- 103. -4
- 104. 3.16049
- 105. -0.197531
- 106. -0.666667
- 107. 20.1569
- 108. 33.9235
- 109. 15.9637
- 110. 28.7312
- 111. 1.00908
- 112. 0.00896339
- 113. a = 2
- 114. y = 6
- 115. x = 43
- 116. x = 14
- 117. y = 200
- 118. x = 350
- 119. x = 0.5
- 120. y = 8
- 121. x = 9
- 122. c = 8
- 123. t = 30
- 124. y = 12
- 125. x = \$286.66
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- 130. x = \$247.79
- 131. (4, 2)
- 132. (-2, 5)
- 133. (3, 5)
- 134. (2, -3)

135. (7, 14)

136. (-8, 9)

137. (500, 1000)

138. (700, 600)

$$(\frac{3}{2}, -\frac{1}{3})$$

140. (-1.72, 7.66)

141. (17.0, 6.24)

142. (12.8, 8.00)

143. (250, 125)

144. (0.139, 0.0820)

145. 2065

146. \$445.00

147. \$4.55

148. \$11,800

149. \$25.00

150. 1627 km

151. 125¾ hours

152. 24 two-bedroom; 60 three-bedroom; 12 four-bedroom

153. Radio: \$44,444; TV: \$26,667; Newspaper: \$88,889

154. 55 handicapped; 550 small-car; 770 regular

155.60%

156. 17.67 tonnes from A; 14.83 tonnes from B

157. Technician: 3082; Scientist: 4623; Executive: 6623

158.40%

159. Peanuts: 32.0 kg; Raisins 18.0 kg

160. CGA: 18 hours; technician: 23 hours

161. Stella = \$9000; Joan = \$10,800; Sue = \$12,960

162. George = \$30,128.81; Robert = \$37,661.02; Sven = \$21,090.17

163.42

164. blue = 3120; red = 1340

165. a) \$18,000; b) \$105,000

166. \$4,344,828

167. 1057

168. a) \$14,888.89; b) \$19,852

169. 238 student members and 345 regular members

170.35

171. 230 km at 50 km/h; 770 km at 100 km/h

- 172. \$270 adult; \$170 child
- 173. \$19.00 per hour plus \$0.35 per km
- 174. 112.5 kg of 6% fertilizer; 187.5 kg of 22% fertilizer
- 175. CSB: 4.2%; OSB: 4.5%
- 176. 0.72% on residences; 0.33% on land with buildings
- 177. 37 units of X and 56 units of Y
- 178. \$1.59 per litre and \$2.89 per dozen
- 179. 25 litres of milk and 15 cans of OJ
- 180. \$1.50 per case
- 181. 843 people
- 182. 23 six-packs and 87 single cans
- 183. partner salary is \$117,000 and the technician salary is \$67,500
- 184. 9 production workers and 9 assembly workers will be laid off
- 185. each child = \$73,451.62; each grandchild = \$24,483.87
- 186. Stage A = 30; Stage B = 48; Stage C = 36
- 187. \$12,040
- 188. Each worker = \$3378.38; each manager = \$4054.05
- 189. Cutting = 18 minutes; Assembly = 11 minutes; Painting = 6 minutes
- 190. 5.26%
- 191. -5.00%
- 192. 285.71%
- 193. -74.07%
- 194. 18.18%
- 195. -10.53%
- 196. \$118.26
- 197. 237.44g
- 198. 105.2cm
- 199. 0.0301
- 200. \$25.00
- 201. \$150.00
- 202. 11.11%
- 203. -9.09%
- 204. \$80.00
- 205. \$49.00
- 206. \$42.86
- 207. \$92.40
- 208. -0.62%
- 209. 0.50%

210. \$131.25 211. \$111.11 212. \$125.00 213. \$66.67 214. \$658.80 215. \$90.00 216. \$99.96 217. \$0.00 218. 200.00% 219. -66.67% 220. \$10,075.00 221. \$1039.78 222. \$230.00 223. \$150.00 224. \$375.00 225. \$249.00 226. GST = \$149.88; PST = \$174.86 227. 30,490,000 228. a) -15.28%; b) 2.65%; c) -13.03% 229. a) 181.82%; b) -51.61%; c) 36.36% 230. 11.11% increase 231. 9.02% 232. 4.96% increase 233. 6.04% 234. \$4.20 235. \$0.99 236. \$311,400 237. \$498.00 238. Year 1: -40.0%; Year 2: 66.67% 239. 720,000 iPhones 240. 7,040,000 visitors 241. 44.24% 242. -16.67% 243. 45,680,000 rounded to the nearest 10,000 244. \$1.43 245. \$29,700 246. \$80,000

247. \$16,000

- 248. 42.86% more at Cloverdale
- 249. 6.95% more than the Canadian dollar
- 250. 18.70% less
- 251. 121.07%
- 252. 25.0% increase
- 253. 17.65%
- 254. 150%
- 255. 2:1 Debt to Equity ratio; therefore, 100%
- 256. 23.08% less
- 257. 28.06 % less
- 258. 1.90%
- $259. -22a^2 + 21ab + 16b^2$
- 260. \$34.58
- 261. \$500.00
- 262. \$117.65
- 263. \$199.50
- 264. \$562.00
- 265. \$350.00
- 266. \$210.00
- $267.\ 0.7y + 2.2\ \overline{6}$
- 268. 2.996843P
- $269. -60y^2 + 45y 51$
- 270. 2.925b 21
- 271. 3.05587x

$$\frac{96nm^{-2} - 72n^{-2}m^{2}}{48n^{-2}m} = \frac{4m^{-3}nm}{2n} = \frac{4m}{2n} - \frac{3nm}{2n} = 2\frac{m}{n} - 1.5m$$

- 273. \$4505.14
- 274. \$252.59
- 275. \$1468.56

$$-\frac{9}{x}$$

$$-\frac{8b^3}{a^9}$$

$$-\frac{5}{8x^2}$$

- 279. 1.19641
- 280. 0.00816485
- $281.\ 41.1527$

282. 9.11858

283. 589.020

284. 0.00826484

285. \$280.97

286. \$436.96

287. \$576.63

288. \$520.85

289. 12.0%

290. -8.00%

291. (7, -2)

292. a) (5.00, -2.00); b) (11.4, -6.32)

$$293.\,i_1=\frac{\mathrm{FV}}{\mathrm{PV}\left(1+i_2\right)}\,\,-1$$

294. a) -30.76%; b) 10.34%; c) -23.60%

295. a) 238.24%; b) \$7.48

296. \$16.00

297. a) 79.27%; b) -79.27%

298. Hugh = \$46,350 and Ken = \$52,080

299. Kajsa receives \$12,203.39; Grace receives \$14,644.07; Mary Anne receives \$9152.54

300. Lingcod: \$3.55 per kg; Red snapper: \$4.10 per kg

301. Base: \$1600 per month; Commission rate: 4.5%

302. \$3400 invested in XYZ; \$4400 invested in ABC

303. \$10.92 reds; \$7.80 blues

304. \$111,111.11

305.456

$$306. \quad \frac{81a^{12}b^8}{(a-b)^4}$$

$$307. -\frac{27}{10x^2}$$

$$-\frac{y}{2x^4}$$
 308.

$$\frac{x}{4}$$

310. \$136.99

311. 2a

312. -3x + 12

313. \$3154.06

314. 
$$x^7 y^3 z^4$$

- 315. x<sup>8</sup>
- 316. 15.67
- 317. x = 3
- 318. x = 2
- 319. a = 1.6
- 320. \$1153.32
- 321. x = 3; y = -2
- 322. x = 0.4; y = 0.7
- 323. x = 0; y = 0
- 324. \$11,500
- 325.72
- 326. 5
- 327. \$6000
- 328. 12
- 329. \$100.00
- 330. \$76.80
- 331. 2.5%
- 332. 4.17%
- 333. \$65.70
- 334. 9.09%
- 335. 33.3%
- 336. 23.1%
- 337. 300%
- 338. 25.9%
- 339. A
- 340. B
- 341. C
- 342. D
- 343. E
- 344. A
- 345. B
- 346. C
- 347. D
- 348. E
- 349. A
- 350. B
- 351. C
- 352. D

353. E

354. A

355. B

356. C

357. D

358. E

359. A

360. B

361. C

362. D

363. E

364. A

365. B

366. C

367. D

368. E

369. A

370. B

371. E

372. E

373. A

374. B

375. C

376. D

377. E

378. E

379. A

380. B

381. C

382. D

383. E

384. A

385. B 386. C

387. B

388. C

389. D

390. E

391. C

392. D

393. C

394. E

395. C

396. E

397. B

398. B

399. A

400. B

401. E

402. D

403. D

404. A

405. A

406. D

407. C

408. A

409. E

410. B

411. B

412. C

413. A

414. E

415. D

416. D

417. C

418. E

419. B

420. A 421. D

422. E

423. B

424. A

425. D

426. D

427. A

428. D

- 430. A
- 431. 1.05822
- 432.0
- 433.3s + 2t
- $434.6x^2y$
- $435. e^3 7e^2 3e + 6$
- $436.7x^2 + 7xy 4y^2$
- $437. \ 2m^3 4m^2 4m + 19$
- 438.8x + 3y
- 439. -6a<sup>2</sup> 10a 4
- 440. 25x 16
- 441. a + 4b
- 442. -0.7x + 3.45
- 443.  $-1.2x^2 -0.3x + 1.3$
- 444. 18.8x 8.5
- 445. 1.7419x
- 446. 3.0509P
- 447. 2.8685y
- 448. 2.9307k
- 449. -2.6243h
- $450.\ 12a^2b 20a^2 + 24ab$
- $451.36k 72k^2 + 63k^3$
- $452. -10x^3y + 5x^2y^2 + 15xy^3$
- $453. -2pq + 8q^2 + 10q$
- 454. 20r<sup>2</sup> 7rt 6t<sup>2</sup>
- $455. -12p^3 + 26p^2 10p$
- $456.\ 2a^2 + 34a + 99$
- $457.\ 24x^2 + 25xy 5y^2$
- 458. 6x
- $-3\frac{a}{b}$
- 460. x y
- 461.  $8 20x + 12x^2$
- $462. \quad \frac{x^2 2x + 3}{4}$
- 463. 16a 4 + 7b
- 464. 2ab 3a<sup>2</sup>

$$\frac{2(1+i)+3(1+i)^2}{6}$$

465.

466. 23.75

467. 78

468. -44.8

469. 0.250

470. \$315.11

471. \$99.00

472. \$346.22

473. \$776.12

474. \$2430.38

475. 0.093083

476. \$1378.42

477. \$812.73

478. \$1794.22

479. \$4687.97

480. \$1071.77

481. \$864.28

482. \$500.00

483. 0.00600

484. \$3500.00

485. \$9900.00

486. 0.175

487. 8.00

488. \$15.00

489. 1365

490. \$2400.00

491. 0.0750

492. 0.0270

493. \$350.00

494. \$575.00

495. 0.0800

496. 0.0450

 $t = \frac{I}{Pr}$ 

$$498. \quad i = \frac{PMT}{PV}$$

$$d = 1 - \frac{N}{L}$$

$$500. \quad CM = \frac{NI + FC}{X}$$

$$X = \frac{NI + FC}{CM}$$

502. 
$$r = (S - P)/Pt$$

503. 
$$t = (S - P) / Pr$$

504. 
$$d_{1}=1-\frac{N}{L(1-d_{2})(1-d_{3})}$$

$$d_{3}=1-\frac{N}{L(1-d_{1})(1-d_{2})}$$
 505.

506. 
$$PV = FV(1+i)^{-n}$$

$$i = \left(\frac{FV}{PV}\right)^{1/n} - 1$$

- 508. a<sup>5</sup>
- 509. x<sup>2</sup>
- 510. b<sup>4</sup>
- 511. h<sup>11</sup>

512. 
$$(1+i)^{13}$$

- 513.  $(1+i)^{n+1}$
- 514. x<sup>28</sup>
- 515. y<sup>9</sup>
- 516. t<sup>2</sup>
- 517. n<sup>4</sup>
- 518. x<sup>2</sup>
- 519. x<sup>21</sup>

520. 
$$4(1+i)^2$$

$$521. \quad \frac{(1+i)^3}{27i^3}$$

$$\frac{t^3}{2r}$$

- 523. -4r<sup>11</sup>
- 524. 16
- 525. -9
- 526. 18.5203
- 527. 0.299070

- 528. 1,000,000
- 529. 1.07006
- 530. 0.985149
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## ch02 Summary

<u>Category</u>	# of Question
Difficulty: Easy	357
Difficulty: Hard	75
Difficulty: Medium	172
Jerome - Chapter 02	602
Learning Objective: 1	121
Learning Objective: 1 (Review Problems)	19
Learning Objective: 1;2	85
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Learning Objective: 4 (Review Problems)	2
Learning Objective: 5	104
Learning Objective: 5 (Review Problems)	8
Learning Objective: 6	108
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Source: student text	514
Source: test bank	125
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