NAME: ___

SECTION: _____

1. Write 957 in words.

1. _____

2. Add. 2987

6421

2. _____

7 15

+8703

3. Subtract. 3000 - 748

4. Divide. 39)18,993

5. Round 29,513 to the nearest thousand.

6. Multiply. $\frac{3}{4} \cdot \frac{3}{5}$

7. Divide. $\frac{2}{9} \div \frac{8}{27}$

8. Divide. $\frac{\frac{1}{8}}{\frac{2}{5}}$

9. Multiply. $3\frac{2}{5} \cdot 4\frac{3}{7}$

10. Divide. $5\frac{3}{5} \div 3\frac{3}{13}$

11. Write $\frac{3}{14}$ with a denominator of 42.

11. _____

12. Add. $\frac{3}{8} + \frac{2}{15}$

13. Subtract. $\frac{3}{4} - \frac{1}{7}$

13. _____

 $17\frac{5}{6} + 11\frac{1}{4}$ 14. Add.

15. Subtract. $162\frac{1}{2} - 67\frac{7}{8}$

15. _____

16. Round 0.53927 to the nearest hundredth.

16. _____

5.44 + 3.772 + 9.817. Add.

BASIC COLLEGE MATHEMATICS

Diagnostic Pretest, Form A

18. Subtract. 39.8 – 15.821

18. _____

19. Divide. 0.8)16.08

- 19. _____
- 20. Use the order of operations to simplify. $2.56 + (5.3 1.9) \cdot 7.1$
- 20. _____

21. Write the ratio of 3 yards to 20 feet.

21. _____

22. Write 434 miles on 15.5 gallons of gasoline as a unit rate.

22. _____

23. Is the proportion $\frac{11}{15} = \frac{32}{45}$ true or false?

23

24. Find the unknown number. $\frac{3}{x} = \frac{18}{24}$

24. _____

25. Find the unknown number. $\frac{45}{21} = \frac{x}{14}$

25. _____

26. Write $\frac{2}{5}$ as a percent.

26. _____

27. 21 is 5% of what number?

27.

28. 75 is what percent of 375?

- 28. _____
- 29. Wheaton Jewelers sold a diamond ring for \$702. If the sales tax rate is 6%, how much tax will be added to the price of the ring?
- 29. _____

30. Find the interest on \$5400 at 10% for two and one-half years.

30. _____

31. Convert 96 km to meters.

31. _____

32. Convert 256 g to kilograms.

32. _____

33. Choose the most reasonable unit for the following. Use kg, g, or mg.

33. _____

The weight of an adult male is 80 _____.

34. _____

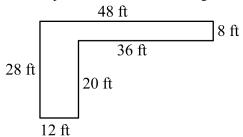
34. Use a conversion table to convert 20 miles to kilometers. Round to the nearest tenth.

35. _____

35. Use a conversion formula to convert 39°F to Celsius. Round to the nearest tenth.

36. __

36. Find the perimeter and area of this figure.



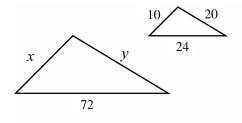
- 37. Find the area of a triangle having height 39 m and base 24 m.
- 37. _____

38. Find the area of a circle with a radius of 7m. Use 3.14 as an approximation for π .

- 38. _____
- 39. Find the volume of a cone with a radius of 4 cm and a height of 12 cm. Use 3.14 as an approximation for π .
- 39.

40. Find the missing lengths in the pair of similar triangles.





41. Subtract. -9 - (-8)

41. _____

42. Multiply. $-12 \cdot (-4)$

42.

43. Divide. $\frac{-105}{-7}$

43. _____

44. Find the value of 4x-6y+z if x=-3, y=2, and z=4.

44.

45. Solve this equation. 3m-6=4m-12

45. _____

For Problems 46 and 47 use the following information.

Monthly Family Budget

wioning raming	Duugei
Housing	\$1600
Food	700
Utilities	300
Insurance	600
Miscellaneous	800

46. What percent of the total is spent on food?

46.

\mathbf{r}	ACTO	α		MATE	TT'N # A	TICO
к	$\Delta \setminus \Pi$	(()	H(+H	$N/I \Delta I \vdash$	1 11 11 11 11	111
D,	Δ	\sim				

Diagnostic Pretest, Form A

- 47. When making a circle graph, how many degrees of the circle would represent miscellaneous?
- 47. _____

48. Find the weighted mean for the following. Round the answer to the nearest tenth.

48.	
-----	--

Value	Frequency	
6	2	
7	3	
8	1	
9	9	
10	4	
11	2	

49. Find the median for the following list of numbers.

49.

- 29, 53, 76, 92, 119, 241, 309
- 50. Find the mode or modes for the following list of numbers.

50. _____

6, 24, 19, 23, 37, 27, 14, 24

Choose the best answer.

- 1. Identify the place value of the 4 and the 2 in the number 643,825.
 - A. Ten-thousands; tens
 - C. Thousands; tens

- B. Hundred-thousands; ones
- D. Ten-thousands; hundreds

2. Add. 8249

> 7 31 458

+ 9095

- A. 17,840
- B. 17,870
- C. 18,869
- D. 17,860

- 5010 3. Subtract. - 986
 - A. 926
- B. 4926
- C. 4034
- D. 4024

- 39)19,656 4. Divide.

 - A. 540
- B. 535
- C. 504
- D. 550

- 5. Round 39,079 to the nearest thousand.
 - A. 40,000
- B. 39,100
- C. 39,000
- D. 30,080

6. _____

7. _____

- 6. Multiply. $\frac{2}{7} \cdot \frac{6}{5}$
- B. $\frac{4}{6}$

7. Divide. $\frac{3}{11} \div \frac{9}{22}$

- B. $\frac{27}{242}$

8. Divide. $\frac{\frac{3}{4}}{\frac{9}{2}}$

8. _____

9. _____

- A. 1
- B. $\frac{13}{5}$
- C. $\frac{2}{3}$
- D. $\frac{1}{6}$

9. Multiply. $3\frac{2}{11} \cdot 4\frac{14}{35}$

- A. 14 B. $\frac{1}{14}$
- C. $12\frac{28}{385}$
- D. $12\frac{4}{35}$

- 10. Divide. $36\frac{1}{4} \div 10\frac{2}{3}$
- B. $3\frac{51}{128}$ C. $3\frac{7}{8}$
- D. $3\frac{1}{2}$
- 10. _____

- 11. Add. $\frac{4}{7} + \frac{3}{4}$
 - A. $\frac{3}{7}$ B. $\frac{7}{11}$
- C. $1\frac{9}{28}$
- D. $\frac{12}{37}$
- 11. _____

12. _____

- 12. Subtract. $\frac{4}{5} \frac{1}{3}$
 - A. $1\frac{1}{2}$ B. $\frac{2}{3}$
- C. $\frac{7}{15}$
- D. $\frac{4}{5}$

- 13. Write $\frac{6}{35}$ with a denominator of 140.

 - A. $\frac{6}{140}$ B. $\frac{146}{140}$
- D. $\frac{24}{140}$
- 13. _____

- 14. Add. $2\frac{8}{11} + 3\frac{3}{7}$
- B. $6\frac{24}{77}$
- C. $5\frac{11}{18}$
- D. $6\frac{12}{77}$
- 14. _____

- 15. Subtract. $3\frac{3}{4} 2\frac{5}{6}$
- B. $1\frac{1}{12}$
- C. 1
- D. 2

15. _____

- 16. Round 1.28769 to the nearest thousandth.
 - A. 1.287
- B. 1.2876
- C. 1.288
- D. 1.2877
- 16. _____

- 17. Add. 6.41 + 3.997 + 2.6
 - A. 12.638
- B. 13.007
- C. 12.907
- D. 12.044
- 17. _____

- 18. Subtract. 41.3 16.924
 - A. 24.376
- B. 24.386
- C. 24.366
- D. 24.396
- 18. _____

- 19. Divide. 0.24)4.224
 - A. 1.76

A. 15.988

B. 0.0176

B. 0.6425

- C. 17.6
- D. 17.01
- 19. _____

- 20. Use the order of operations to simplify.
- $5.81 3.24 \cdot (5.2 4.95)$ C. 6.425
 - D. 5

20. _____

- 21. Write the ratio of 18 inches to $2\frac{1}{2}$ yards.

- C. $\frac{1}{5}$
- D. $\frac{12}{5}$
- 22. _____

- 22. Write \$46.75 for 17 hours as a unit rate.
 - A. \$46.75 per hour C. \$4.68 per hour

- B. \$17.00 per hour
- D. \$2.75 per hour

23. Which of the following proportions is false?

A.
$$\frac{15}{24} = \frac{10}{16}$$

B.
$$\frac{14}{22} = \frac{21}{33}$$

C.
$$\frac{30}{45} = \frac{100}{150}$$

D.
$$\frac{15}{27} = \frac{12}{18}$$

- 24. Find the unknown number.
 - A. 12
- B. 21
- C. 36
- D. 63

- 25. Find the unknown number.
 - A. 49
- B. 7
- C. 35
- D. 6

- 26. Write $\frac{5}{8}$ as a percent.
 - A. 60.0%
- B. 62.5%
- C. 70.0%
- D. 82.5%

- 27. 17 is 8% of what number?
 - A. 1.36
- B. 21.25
- C. 2.125
- D. 212.5

- 28. 36 is what percent of 288?
 - A. 800%
- B. 80%
- C. 12.5%
- D. 125%
- 28. _____

29. _____

23. _____

24. _____

25. _____

26. _____

27. _____

- 29. If the price of a pair of shoes is \$60.50 and the sales tax is 8%, what is the total cost?
 - A. \$60.58
- B. \$65.08
- C. \$65.34
- D. \$68.50
- 30. Find the interest on \$800 at 6% for three and one-half years.
 - A. \$48.00
- B. \$96.00
- C. \$168.00
- D. \$144.00
- 30. _____

- 31. Convert 182 g to kilograms.
 - A. 1820 kg
- B. 18.2 kg
- C. 1.82 kg
- D. 0.182 kg
- 31. _____

- 32. Convert 13.6 m to centimeters.
 - A. 136 cm
- B. 1360 cm
- C. 13,600 cm
- D. 136,000 cm
- 33. _____

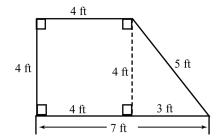
34. _____

35. _____

- 33. Choose the most reasonable unit for the following.
 - The length of my bed is 2.3 _____. A. km
 - B. m
- C. cm
- D. mm
- 34. Use a conversion table to convert 78 inches to centimeters. Round to the nearest tenth.
 - A. 25.4
- B. 30.7
- C. 198.1
- D. 195.0
- 35. Use the conversion formula to convert 212 °C to Fahrenheit. Round to the nearest tenth of a degree.
 - A. 100 °F
- B. 413.6 °F
- C. 229.8 °F
- D. 324 °F

36. Find the perimeter and area of the figure.





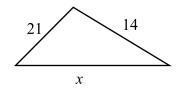
- A. $P = 20 \text{ ft}, A = 28 \text{ ft}^2$
- B. P = 15 ft, A = 22 ft²
- C. $P = 22 \text{ ft}, A = 20 \text{ ft}^2$
- D. $P = 20 \text{ ft}, A = 22 \text{ ft}^2$
- 37. Find the area of a triangle having height 16 cm and base 20 cm.
 - A. 36 cm²
- B. 160 cm²
- C. 320 cm²
- D. 72 cm²
 - 38.
- 38. Find the area of a circle with a radius of 6.4 ft. Use 3.14 as an approximation for π . Round to the nearest tenth.
 - A. 12.8 ft²
- B. 20.1 ft²
- C. 128.6 ft²
- D. 514.5 ft²
- 39. Find the volume of a pyramid with a base which is a rectangle with a width of 4 m and a length of 5 m and with a height of 6 m.

- A. 40 m^3
- B. 60 m^3
- C. 120 m^3
- D. 240 m^3
- 40. Find the missing lengths in the pair of similar triangles.

40. _____

37.

39. _





A. x = 28, y = 3

B. x = 35, y = 2

C. x = 28, y = 4

D. x = 28, y = 2

- 41. Subtract. -19-(-7)
 - A. -26
- C. -12
- D. 12

42. Multiply.

42. _

- A. -6
- B. 6
- C. -24
- D. 24

43. Divide.

43. ____

41. _____

- A. 25
- B. -25
- C. 9
- D. -9
- 44. Find the value of 2x-5y if x=-4 and y=-2.

- A. 2
- B. -2
- C. -18
- D. 18

45. Solve this equation. 4x-5=7x-17

A. -2

B. 2

C. -4

D. 4

45. _____

For Problems 46 and 47 use the following information.

Monthly Family Rudget

moning runniy	Duugei
Housing	\$1400
Food	600
Utilities	350
Insurance	250
Miscellaneous	1400

46. What percent of the total goes to insurance?

A. 35%

B. 8.75%

C. 6.25%

D. 62.5%

46. _____

47. _____

47. When making a circle graph, how many degrees of the circle would represent miscellaneous?

A. 31.5°

B. 126°

C. 54°

D. 22.5°

48. Find the weighted mean for the following.

48. _____

Value	Frequency	
3	1	
5	6	
7	3	

A. 2.0

B. 3.4

C. 5.0

D. 5.4

49. Find the median for the following list of numbers.

49. _____

23, 35, 35, 51, 63, 77, 80

A. 35

B. 51

C. 52

D. 51.5

50. Find the mode or modes for the following list of numbers.

50. _____

16, 21, 35, 43, 21, 31, 64

A. 21 and 33 B. 31

C. 21

D. 33

ANSWERS TO DIAGNOSTIC PRETESTS

DIAGNOSTIC PRETEST ANSWERS, FORM A

Chapter 1

- 1. Nine hundred fifty-seven
- 2. 18,133
- 3. 2252
- 4. 487
- 5. 30,000

Chapter 2

- 6. $\frac{9}{20}$
- 7. $\frac{3}{4}$
- 8. $\frac{5}{16}$
- 9. $15\frac{2}{35}$
- 10. $1\frac{11}{15}$

Chapter 3

- 11. $\frac{9}{42}$
- 12. $\frac{61}{120}$
- 13. $\frac{17}{28}$
- 14. $29\frac{1}{12}$
- 15. $94\frac{5}{8}$

Chapter 4

- 16. 0.54
- 17. 19.012
- 18. 23.979
- 19. 20.1

20. 26.7

Chapter 5

- 21. $\frac{9}{20}$
- 22. 28 mpg
- 23. False
- 24. 4
- 25. 30

Chapter 6

- 26. 40%
- 27. 420
- 28. 20%
- 29. \$42.12
- 30. \$1350

Chapter 7

- 31. 96,000 m
- 32. 0.256 kg
- 33. kg
- 34. 32.2 km
- 35. 3.9 °C

Chapter 8

- 36. P = 152 ft; $A = 624 \text{ ft}^2$
- 37. 468 m²

- 38. 153.86 m²
- 39. 200.96 cm³
- 40. x = 30; y = 60

Chapter 9

- 41. -1
- 42. 48
- 43. 15
- 44. -20
- 45. 6

Chapter 10

- 46. $17\frac{1}{2}\%$
- 47. 72°
- 48. 8.8
- 49. 92
- 50. 24

DIAGNOSTIC PRETEST ANSWERS, FORM B

Chapter 1

- 1. A
- 2. A
- 3. D
- 4. C
- 5. C

Chapter 2

- 6. C
- 7. A
- 8. D
- 9. A
- 10. B

Chapter 3

- 11. C
- 12. C
- 13. D
- 14. D
- 15. A

Chapter 4

- 16. C
- 17. B
- 18. A
- 19. C
- 20. D

Chapter 5

21. C

- 22. D
- 23. D
- 24. B
- 25. A

Chapter 6

- 26. B
- 27. D
- 28. C
- 29. C
- 30. C

Chapter 7

- 31. D
- 32. B
- 33. B
- 34. C
- 35. B

Chapter 8

- 36. D
- 37. B
- 38. C
- 39. A
- 40. D

Chapter 9

- 41. C
- 42. B
- 43. A

44. A

45. D

Chapter 10

- 46. C
- 47. B
- 48. D
- 49. B
- 50. C

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Chapter Test Forms

CHAPTER 1, FORM A

BASIC COLLEGE MATHEMATICS

NAME: _____

SECTION: _____

Write each number in words.

3. _____

Add.

54

625

8192

11,010

Subtract.

-483

<u>- 7689</u>

7. _____

Multiply.

8.
$$12\times3\times5$$

10. _____

Divide whenever possible.

12. 17)43,027

12. _____

13. $\frac{506}{0}$

13. _____

14. 18,848 ÷ 32

14. _____

15. 190)45,600

15. _____

Round as shown.

16. 7049 to the nearest hundred

16. _____

17. 110,983 to the nearest thousand

17. _____

Simplify using the order of operations.

18. $8+4^2\times 2$

18. _____

19. $21-2\cdot 3^2+7\sqrt{49}$

19. _____

Solve each of the following application problems. First estimate the answer. Then find the exact answer.

20. Jeremy received two paychecks of \$769 and \$921. After paying \$1125 in bills, how much money does he have left?

20. _____

21. A county fair collects 208 adult tickets at \$6 each and 137 tickets for children at \$4 each. Find the total amount of money collected.

21. _____

22. How long will it take to upgrade 396 computers if 18 computers can be upgraded each day?

- 22. _____
- 23. Meghan's credit limit is \$4800. If she uses her credit card to make purchases of \$319, \$65, \$197, and \$951, how much more can she spend before going over the credit limit?
- 23.

24. Explain in your own words the commutative property of multiplication. Give an example showing this property.

24. _____

25. List the divisibility rules for 2 and 10.

CHAPTER 1, FORM B NAME:		BASIC COLLEGE MATHEMATICS SECTION:	
1. 7034		1.	
2. 92,495		2.	
3. Use digits to write "fo	orty-two thousand, six hundred two."	3.	
Add.			
4. 8275 38 + 712		4.	
5. 90,002 743 5918 9005 + 48		5.	
Subtract.			
6. 8273 - 368		6.	
7. 30,042 <u>- 9187</u>		7.	
Multiply.			
8. 16×3×7		8.	
9. 28×600		9.	- <u></u> -
10. (82)(47)		10.	
11 0127		11	

× 206

Divide whenever possible.

12. 19)61,579

12. _____

13. $\frac{528}{1}$

13. _____

14. 13,416 ÷ 52

14. _____

15. 170)59,500

15. _____

Round as shown.

16. 58,249 to the nearest hundred

16.

17. 360,972 to the nearest thousand

17. _____

Simplify using the order of operations.

18. $9+7^2\times 2$

18. _____

19. $(7-3)^2 \div 2 - 4 + 8$

19. _____

Solve each of the following application problems. First estimate the answer. Then find the exact answer.

20. Misha earns \$183 on Monday, \$94 on Tuesday, and \$411 on Wednesday. She spends \$309 Thursday. How much money does she have left?

20. _____

21. A school buys 12 printers at \$429 each, and 7 computers at \$945 each. How much was spent altogether?

21. _____

22. Marni is planning a cross-country trip of 2925 miles. If she drives 325 miles a day, how many days will it take to complete the trip?

22. _____

23. The list price of a motorcycle is \$21,830. Find the sale price after a dealer's discount of \$1360, a manufacturer's rebate of \$2000, and a manager's special discount of \$810.

23. _____

24. Explain in your own words the associative property of multiplication. Give an example showing this property.

24. _____

25. List the four steps in the order of operations.

CHAPTER 1, FORM C NAME:		BASIC COLLEGE MATHEMATICS	
		SECTION:	
Write	each number in words.		
1. 3	098	1	
2. 4	7,526	2	
3. U	se digits to write "seventy-three thousand, thirty-two."	3	
Add.			
	7153 28 - 495	4	
5. ±	31,004 27 193 4532 -10,103	5	
Subtro	act.		
6. =	7853 - <u>976</u>	6	
	41,012 - 8437	7	
Multij	ply.		
8. 9	×13×3	8	
9. 8	5×400	9	
10. (29)(84)	10	
11 .	4056	11	

× 304

Divide whenever possible.

12. 17)80,053

12. _____

13. $\frac{413}{0}$

13. _____

14. 13,862 ÷ 29

14. _____

15. 130\\ 81,900

15. _____

Round as shown.

16. 5849 to the nearest hundred

16. _____

17. 49,578 to the nearest thousand

17.

Simplify using the order of operations.

18. $4 \times 3^3 - 9$

18. _____

19. $19 - 5 \cdot \sqrt{9} + 3^2 \cdot 7$

19. _____

Solve each of the following application problems. First estimate the answer. Then find the exact answer.

20. Maria receives two paychecks of \$678 and \$664. After paying \$842 in bills, how much money does she have left?

20. _____

21. A demolition derby collects 174 adult tickets at \$9 each and 89 tickets for children at \$4 each. Find the total amount of money collected.

21. _____

22. How long will it take to assemble 416 chairs if 16 chairs can be assembled each day?

22. _____

23. Kevin's credit limit is \$2800. If he uses his credit card to make purchases of \$240, \$156, \$61, and \$715, how much more can he spend before going over the credit limit?

23. _____

24. Explain in your own words the commutative property of multiplication. Give an example showing this property.

24. _____

25. List the divisibility rules for 2 and 3.

CHAPTER 1, FORM D **BASIC COLLEGE MATHEMATICS** NAME: _____ SECTION: Write each number in words. 1. 9610 2. 35,312 3. Use digits to write "seventy-one thousand, five." Add.5273 816 <u>+ 94</u> 7015 326 10,047 31 +2563Subtract. 6. 6196 - 677 7. 40,016 7. _____ -7209Multiply. 8. $12\times4\times7$ 9. 45×300 10. (47)(93) 10. _____

11. _____

11. 3925

 \times 704

Divide whenever possible.

12. 19)54,644

12. _____

13. $\frac{0}{1}$

13. _____

14. 19,476 ÷ 36

14. _____

15. 230)94,300

15. _____

Round as shown.

16. 10,481 to the nearest hundred

16. _____

17. 751,834 to the nearest thousand

17. _____

Simplify using the order of operations.

18. $5+6^2\times 2$

18. _____

19. $16 \cdot \sqrt{25} - 3 \cdot 2^3 + 1$

19. _____

Solve each of the following application problems. First estimate the answer. Then find the exact answer.

20. Vincent earns \$258 on Monday, \$105 on Tuesday, and \$312 on Wednesday. He spends \$299 on Thursday. How much money does he have left?

20. _____

21. A college buys 15 printers at \$389 each and 8 computers at \$937 each. How much was spent altogether?

21. _____

22. Lisa is planning to take a 1854-mile road trip. If she drives 206 miles a day, how many days will it take to complete the trip?

22. _____

23. The list price of a car is \$17,250. Find the sale price after the manufacturer's rebate of \$2500, the dealer's discount of \$1250, and the manager's special discount of \$850.

23. _____

24. Explain in your own words the associative property of addition. Give an example showing this property.

- 25. Explain how to multiply whole numbers by 10, 100, or 1000.
- 25. _____

CHAPTER 1, FORM E	BASIC COLLEGE MATHEMATICS
NAME:	SECTION:
Write each number in words.	
1. 4207	1
2. 39,205	2
3. Use digits to write "eighty-two thousand, seven."	3
Add.	
4. 8792	4
357	· · · · · · · · · · · · · · · · · · ·
<u>+ 98</u>	
5. 4601	5
279	
43	
12,212	
<u>+ 4948</u>	
Subtract.	
6. 6134	6
<u> </u>	
7. 20,301	7
<u>- 8942</u>	
Multiply.	
8. 5×7×9	8
	9
9. 39×400	
10. (82)(47)	10
11. 2907	11

× 506