https://selldocx.com/products

/test-bank-applied-calculus-for-the-managerial-life-and-social-sciences-10e-tan 1.1 - Precalculus Review I

$$-\frac{7}{8} < -\frac{15}{16}$$

True a. False b.

ANSWER: False **POINTS:**

True / False **QUESTION TYPE:** HAS VARIABLES: True

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2. Suppose a and b are real numbers other than zero and that a>b. State whether the inequality is true or false.

$$\frac{1}{a} > \frac{1}{b}$$

True a. False b.

ANSWER: False POINTS:

QUESTION TYPE: True / False

HAS VARIABLES: True

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3. Determine whether the statement below is true for all real numbers d.

|d+1| = |d| + 1

True a. b. False

ANSWER: False **POINTS**:

QUESTION TYPE: True / False

HAS VARIABLES: True

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4. If a < b, then a - c > b - c.

a. True b. False

ANSWER: False **POINTS:** 1

True / False **QUESTION TYPE:**

HAS VARIABLES: True

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5. A manufacturer of a certain commodity has estimated that her profit in thousands of dollars is given by the expression

$$-2x^2+14x-6$$

where x (in thousands) is the number of units produced.

What production range will enable the manufacturer to realize a profit of at least \$6,000 on the commodity?

- a. Between 1,000 and 9,000 units.
- b. Between 5,000 and 10,000 units.
- c. Between 5,000 and 6,000 units.
- d. Between 1,000 and 6,000 units.
- e. Between 1,000 and 10,000 units.

ANSWER: d
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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6. Rationalize the numerator of the expression.

$$\sqrt{\frac{3y}{x}}$$

a.
$$\frac{3y}{\sqrt{3xy^2}}$$
b.
$$\frac{3}{\sqrt{xy^2}}$$
c.
$$\frac{3y}{\sqrt{3xy}}$$
d.
$$3y$$

e.
$$\frac{3y}{\sqrt{m^2}}$$

ANSWER: c
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

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$$10^{\frac{1}{2}} \approx 3.162$$

7. Use the fact that

to evaluate the expression without using a calculator.

 $10^{4.5}$

- a. 316,200
 b. 316.2
 c. 31.62
 d. 31,620
- e. 3,162,000

ANSWER: d
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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8. Simplify the expression. (Assume that r, s, and t are positive.)

$$\sqrt[3]{8r^9}\sqrt{s^2t^8}$$

- a. $8r^3s^1t^4$
- b. $2r^6s^4t^4$
- c. $8r^3s^4t^4$
- d. $2r^3s^1t^4$
- e. $2r^3s^4t^6$

ANSWER: d
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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9. Evaluate the expression.

$$\left[\left[-\frac{1}{2} \right]^{3} \right]^{-1}$$

a. 8 b. –9

c. -8 d. -16 e. 9

ANSWER: c POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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10. Determine whether the statement is true or false.

$$\frac{9^{\frac{5}{2}}}{3^6} = \frac{1}{3}$$

a. True

b. False

ANSWER: a POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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11. Determine whether the statement is true or false.

$$-\frac{7}{8} > -\frac{15}{16}$$

a. Falseb. True

ANSWER: b POINTS: 1

QUESTION TYPE: Multiple Choice

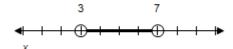
HAS VARIABLES: True

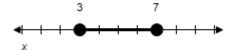
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12. Show the interval [3, 7] on a number line.

a.

b.

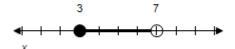




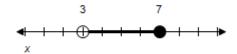
c.

d.





e.



ANSWER:

POINTS:
QUESTION TYPE:

HAS VARIABLES: DATE CREATED:

DATE MODIFIED:

b 1

Multiple Choice

True

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13. Evaluate the expression.

$$|2\sqrt{2}-1|+|6-2\sqrt{2}|$$

a. $4\sqrt{2}$

b. —

c. 5

d. $2\sqrt{2}$

e. $-4\sqrt{2}$

ANSWER: c POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

DATE CREATED: 12/25/2015 9:33 AM *DATE MODIFIED:* 2/19/2016 5:24 AM

14. Suppose a and b are real numbers other than zero and that a > b. State whether the inequality is true or false.

$$\frac{1}{a}>\frac{1}{b}$$

a. False

b. True

ANSWER: a POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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15. Evaluate the expression.

$$\frac{16^{\frac{7}{8}}16^{\frac{1}{4}}}{16^{\frac{1}{8}}}$$

a. **16**

b. 4

c. 2

d. _____

e. <u>1</u>

a 1

ANSWER: POINTS:

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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16. Rewrite the expression using positive exponents only.

$$\sqrt{x^{-5}} \cdot \sqrt{16x^{-5}}$$

a. $\frac{16}{x^5}$

b. $\frac{4}{x^5}$

c. $\frac{4}{x^{10}}$

d. 16x¹⁰

e. 4x⁵

ANSWER: b

POINTS:

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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17. Simplify the expression. (Assume x and y are positive.)

$$\sqrt{4x^{-8}y^{6}}$$

a. $4\frac{y^3}{x^4}$

b. $4x^4y^3$

c. $2\frac{x^4}{y^3}$

d. $2x^4y^3$

e.
$$2\frac{y^3}{x^4}$$

ANSWER: e POINTS:

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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18. Determine whether the statement below is true for positive real numbers c.

False a.

True b.

ANSWER: b **POINTS:**

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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19. Rationalize the denominator of the expression.

$$\sqrt{\frac{11x}{y}}$$

a.
$$\frac{\sqrt{11xy}}{x}$$

b.
$$\frac{\sqrt{11(x+y)}}{y}$$

c.
$$\frac{\sqrt{11(x-y)}}{y}$$

e.
$$11 \frac{\sqrt{xy}}{y}$$

ANSWER: d 1

POINTS:

Multiple Choice **QUESTION TYPE:**

HAS VARIABLES:

True

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20. Rationalize the numerator of the expression.

$$\frac{\sqrt[7]{x^3z}}{6v}$$

a.

b.

$$xyz$$
 $\sqrt{7}$
 $\sqrt{4}$
 $\sqrt{6}$

c.

$$\frac{xyz}{\sqrt[7]{x^4z^6}}$$

d.

$$\sqrt[3]{x^4z^6}$$

e.

$$\frac{xz}{y\sqrt[3]{x^3z}}$$

ANSWER:

POINTS:

QUESTION TYPE:

HAS VARIABLES:

DATE CREATED:

DATE MODIFIED:

d 1

Multiple Choice

True

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12/25/2015 9:33 AM

21. Find the maximum profit P (in dollars) given that

 $12(P-2,200) \le 10(P+2,700)$.

a.

\$40,050

\$13,350

c.

\$27,000

d.

\$26,700

e.

\$27,150

ANSWER:

POINTS:

QUESTION TYPE:

HAS VARIABLES:

DATE CREATED: DATE MODIFIED: d

Multiple Choice

True

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22. A salesman's monthly commission is 25% on all sales over \$14,000. If his goal is to make a commission of at least \$4,800/month, what minimum monthly sales figures must he attain?

a. \$16,400
b. \$33,200
c. \$18,800
d. \$23,600
e. \$28,400

ANSWER: b
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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23. Simplify the expression.

$$\frac{3x^3y^2}{2xy^4}$$

- a. $\frac{2x^2}{3v^2}$
- b. $\frac{3y^2}{2x^2}$
- c. $\frac{3x^2}{2y^2}$
- d. $\frac{3x^3}{2y^2}$
- e. $\frac{3x^2}{2x^3}$

ANSWER: c
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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24. The diameter x (in inches) of a batch of ball bearings manufactured by PAR Manufacturing satisfies the inequality

$$|x - 0.75| \le 0.05$$

What is the smallest diameter a ball bearing in the batch can have?

a. 0.78 inches
b. 0.76 inches
c. 0.8 inches
d. 0.75 inches
e. 0.7 inches

ANSWER: e
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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25. Evaluate the expression.

a. 5
b. 2
c. 7
d. 3
e. 6

ANSWER: b
POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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26. Determine whether the statement is true or false.

$$a < b$$
, then $a-f < b-f$.

a. True b. False

ANSWER: a POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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$x-6 \le 1 \text{ and } x+3 > 3$

d.
$$(-\infty,0)U[7,\infty)$$

ANSWER: a POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

a.

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28. Evaluate the expression.

5

e

ANSWER:

POINTS:

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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29. Simplify the expression.

$$\frac{x^{\frac{8}{3}}}{x^{-2}}$$

a.
$$-\frac{14}{3}$$

b.
$$-\frac{3}{14}$$

c.
$$\frac{3}{x^{14}}$$

d.
$$\frac{14}{x}$$

ANSWER: d POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: True

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$$3^{\frac{1}{2}} \approx 1.732$$

30. Use the fact that the

to evaluate the expression without using a calculator.

Round the answer to the nearest thousandth.

a. 46.765
b. 24.994
c. 5.196
d. 15.588
e. 43.075

ANSWER: d POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

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31. Evaluate the expression.

$$\left[\left(-\frac{1}{2} \right)^{2} \right]^{-3}$$

ANSWER: 64

POINTS:

QUESTION TYPE: Numeric Response

HAS VARIABLES: False

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$$\frac{1}{10^{\frac{1}{2}}} \approx 3.162$$

32. Use the fact that to evaluate the expression without using a calculator.

 $10^{2.5}$

ANSWER: 316.2 POINTS: 1

QUESTION TYPE: Numeric Response

HAS VARIABLES: True

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33. Evaluate the expression.

$$|\sqrt{2}-1|+|9-\sqrt{2}|$$

ANSWER: 8
POINTS: 1

QUESTION TYPE: Numeric Response

HAS VARIABLES: True

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34. Evaluate the expression.

$$\frac{16^{-\frac{5}{8}}16^{\frac{1}{2}}}{16^{-\frac{3}{8}}}$$

ANSWER: 2
POINTS: 1

QUESTION TYPE: Numeric Response

HAS VARIABLES: True

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35. Find the maximum profit P (in dollars) given that

$$5(P-2,000) \le 3(P+2,700)$$
.

\$	0.050
ANSWER:	9,050
POINTS:	1
QUESTION TYPE:	Numeric Response
HAS VARIABLES:	True
DATE CREATED:	12/25/2015 9:33 AM
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36. A salesman's monthly commission is \$4,800/month, what minimum monthly s	20% on all sales over \$15,000. If his goal is to make a commission of at least ales figures must he attain?
\$	
ANSWER:	39,000
POINTS:	1
QUESTION TYPE:	Numeric Response
HAS VARIABLES:	True
DATE CREATED:	12/25/2015 9:33 AM
DATE MODIFIED:	12/25/2015 9:33 AM
37. The diameter x (in inches) of a batch	of ball bearings manufactured by PAR Manufacturing satisfies the inequality
$ x - 0.2 \le 0.04$	
What is the smallest diameter a ball bearing	ing in the batch can have? Give your answer to two decimal places, if necessary
inches	
ANSWER:	0.16
POINTS:	1
QUESTION TYPE:	Numeric Response
HAS VARIABLES:	True
DATE CREATED:	12/25/2015 9:33 AM
DATE MODIFIED:	12/28/2015 2:00 AM
38. Evaluate the expression.	
-17+7 11-9	
ANSWER:	5
POINTS:	1
QUESTION TYPE:	Numeric Response
HAS VARIABLES:	True
DATE CREATED:	12/25/2015 9:33 AM
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$$3^{\frac{1}{2}} \approx 1.732$$

39. Use the fact that the

to evaluate the expression without using a calculator.

2 2

Round the answer to the nearest thousandth, if necessary.

ANSWER: 15.588
POINTS: 1

QUESTION TYPE: Numeric Response

HAS VARIABLES: True

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40. Simplify the expression. (Assume that r, s, and t are positive.)

$$\sqrt[3]{64r^6}\sqrt{s^8t^4}$$

ANSWER: $4r^2s^4t^2$

POINTS:

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: False

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41. Rationalize the numerator of the expression.

$$\sqrt[3]{\frac{2y}{x}}$$

ANSWER:

$$\frac{2y}{\sqrt[3]{4xy^2}}$$

POINTS:

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: False

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42. Rewrite the expression using positive exponents only.

$$\sqrt{x^{-7}} \cdot \sqrt{4x^{-1}}$$

ANSWER:

$$\frac{2}{x^4}$$

POINTS:

1

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: True

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43. Simplify the expression. (Assume x and y are positive.)

$$\sqrt{4x^{-12}y^4}$$

ANSWER: $\frac{2y}{x^6}$

POINTS:

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: True

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44. Rationalize the denominator of the expression.

$$\sqrt{\frac{3x}{y}}$$

ANSWER: $\frac{\sqrt{3xy}}{y}$

POINTS:

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: True

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45. Rationalize the numerator of the expression.

$$\frac{\sqrt[7]{x^2z^3}}{4v}$$

ANSWER: $\frac{xz}{4y\sqrt[3]{x^5z^4}}$

POINTS:

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: True

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46. Simplify the expression.

1.1 - Precalculus Review I		
$9x^6y^3$		
$4x^2y^6$		
ANSWER:	$9x^{4}$	
	$4y^3$	
POINTS:	1	
QUESTION TYPE:	Subjective Short Answer	
HAS VARIABLES:	True	
DATE CREATED:	12/25/2015 9:33 AM	
DATE MODIFIED:	12/25/2015 9:33 AM	
47. Evaluate the expression.		
<u> </u>		
³ √2 ¹²		
ANSWER:	24	
POINTS:	1	
QUESTION TYPE:	Subjective Short Answer	
HAS VARIABLES:	True	
DATE CREATED:	12/25/2015 9:33 AM	
DATE MODIFIED:	12/25/2015 9:33 AM	
48. Simplify the expression.		
7		
<u>x ³</u>		
x^{-2}		
ANSWER:	<u>13</u>	
ANSWER.	x 3	
D 0.17 PM		
POINTS:		
QUESTION TYPE:	Subjective Short Answer	
HAS VARIABLES:	True	
DATE CREATED:	12/25/2015 9:33 AM	
DATE MODIFIED:	12/25/2015 9:33 AM	
49. A manufacturer of a certain commodity has estimated that her profit in thousands of dollars is given by the expression		
$-4x^2+20x-8$		
where x (in thousands) is the number of units produced.		
What production range will enable the manufacturer to realize a profit of at least \$8,000 on the commodity?		
Between and units.		

ANSWER: 1,000; 4,000

POINTS:

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: True

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50. Determine whether the statement is true or false.

$$\frac{9^{\frac{1}{2}}}{3^2} = \frac{1}{3}$$

ANSWER: true POINTS: 1

QUESTION TYPE: Subjective Short Answer

HAS VARIABLES: True

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Match each interval with the corresponding number line.

Choose the correct letter for each question.

a. [4, 9]

b. (4, 9)

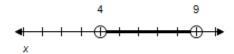
c. (−6, ∞)

d. (-∞,6]

QUESTION TYPE: Matching HAS VARIABLES: True

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51.

ANSWER:

b 1

POINTS:



52.

ANSWER:

d 1

POINTS:

-6 ◀ ! ! ! ⊕ | | | | | |>

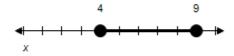
53.

ANSWER:

c

POINTS:

1



54.

ANSWER:

a
POINTS:

Match each pair of inequalities with the corresponding values of x.

Choose the correct letter for each question.

a. $x-5 \le 6$ and x+9 > 3

b. $x-5 \le 6 \text{ and } x+9 \ge 3$

c. $x-5 \ge 6 \text{ and } x+9 \le 3$

d. $x-5>6 \text{ and } x+9\leq 3$

QUESTION TYPE: Matching HAS VARIABLES: True

 DATE CREATED:
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55. (-∞,-6]U[11, ∞)

ANSWER: c
POINTS: 1

56. (-∞,-6]U(11, ∞)

ANSWER:

POINTS:

57. [-6, 11]

ANSWER: b

POINTS:

58. (-6, 11] ANSWER:

POINTS:

a