

Mathematical Ideas
Chapter 8 Test D

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use the distance formula to find the distance between the pair of points.

1) $(-4, -7)$ and $(4, 5)$

A) 80

B) 4

C) $80\sqrt{5}$

D) $4\sqrt{13}$

1) _____

Find the midpoint of the line segment joining the two points.

2) $(-7, -2)$ and $(5, -5)$

A) $(-12, 3)$

B) $(-2, -7)$

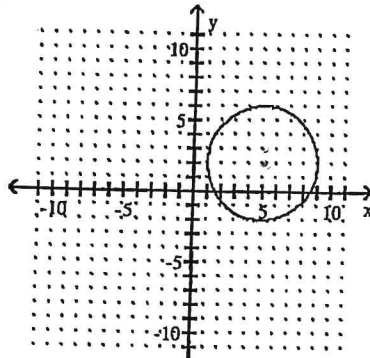
C) $(-6, \frac{3}{2})$

D) $(-1, -\frac{7}{2})$

2) _____

Choose the equation that matches the graph.

3)



A. $(x - 5)^2 + (y - 2)^2 = 16$

B. $(x - 5)^2 + (y - 2)^2 = 2$

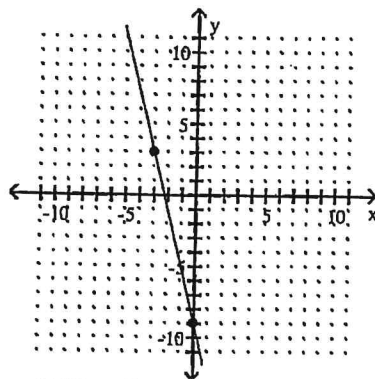
C. $(x - 5)^2 + (y - 2)^2 = 4$

D. $(x - 5)^2 - (y - 2)^2 = 16$

3) _____

Identify whether the slope is positive, negative, zero, or undefined.

4)



A) Negative

B) Positive

C) Zero

D) Undefined

4) _____

Write the equation of a circle with the given center and radius.

5) Center at (4, -3); Radius 12

A) $(x - 4)^2 + (y + 3)^2 = 144$

B) $(x - 3)^2 + (y + 4)^2 = 12$

C) $(x + 3)^2 + (y - 4)^2 = 12$

D) $(x + 4)^2 + (y - 3)^2 = 144$

5) _____

Solve the problem.

6) A deep sea diving bell is being lowered at a constant rate. After 11 minutes, the bell is at a depth of 400 feet. After 55 minutes the bell is at a depth of 1300 feet. What is the average rate of lowering per minute?

A. 0.05 ft per minute

B. 16.4 ft per minute

C. 20.5 ft per minute

D. 23.6 ft per minute

6) _____

Restate the equation in slope-intercept form.

7) $4x - 5y = -5$

A) $y = 3x$

3

B. $y = \frac{4}{5}x + 1$

C) $y = \frac{5}{3}$

D. $y = \frac{13}{5}x + 1$

7) _____

Write the slope-intercept form of the equation for the line passing through the given pair of points.

8) (1, -5) and (3, 1)

A. $y = -8x + 3$

B. $y = -8x - 3$

C. $y = -3x - 8$

D. $y = 3x - 8$

8) _____

Determine whether the relation defines y as a function of x.

9) $x = 5|y|$

A) Function

B) Not a function

9) _____

Evaluate the function.

10) Find $f(0)$ when $f(x) = x^2 + 3x - 2$

A) 4

B) 2

C) 0

D) -2

10) _____

Solve the problem.

11) A cable TV company charges \$25 for the basic service plus \$5 for each movie channel. Let $C(x)$ be the total cost in dollars of subscribing to cable TV, using x movie channels. Write a cost function.

A. $C(x) = 25x + 5$

B. $C(x) = 25x - 5$

C. $C(x) = 5x - 25$

D. $C(x) = 5x + 25$

11) _____

Tell whether the graph opens upward or downward and whether the graph is wider, narrower, or the same as $f(x) = x^2$.

12) $f(x) = -x^2 - 17$

A. Downward, same

B. Upward, narrower

C. Downward, narrower

D. Upward, same

12) _____

Write in exponential form.

13) $\log_9 1 = 0$

A) $9^1 = 0$

C) $1^9 = 0$

B) Not possible

D) $9^0 = 1$

13) _____

Convert to logarithmic form.

14) $\left(\frac{11}{2}\right)^4 = \frac{14,641}{16}$

$\log_{11/2} \left(\frac{14,641}{16}\right) = 4$

C) $\log_{11/2} 4 = \frac{14,641}{16}$

B) $\frac{\log_4 14,641}{\log_4 16} = \frac{11}{2}$

D) $\log_4 \left(\frac{11}{2}\right) = \frac{14,641}{16}$

14) _____

Use the exponential key to find an approximation to the nearest thousandth.

15) $13^{5/9}$

A. 4.574

B. 7.222

C. 4.158

D. 101.181

15) _____

Solve the problem.

16) A merchant has coffee worth \$30 a pound that she wishes to mix with 60 pounds of coffee worth \$90 a pound to get a mixture that can be sold for \$80 a pound. How many pounds of the \$30 coffee should be used?

A) 6 lb

B) 12 lb

C) 72 lb

D) 36 lb

16) _____

17) The sum of a student's three scores is 207. If the first is 13 points more than the second, and the sum of the first two is 15 more than twice the third, what was the first score?

A) 65

B) 78

C) 51

D) 64

17) _____

Solve by the substitution method.

18) $y = 4x - 3$

$3x + y = 11$

A. (2,5)

B. (5,2)

C. (5, -4)

D. (1,1)

18) _____

Solve the system.

19) $x + y + z = 6$

$x - z = -2$

$y + 3z = 11$

A. $\{(1,2,3)\}$

B. \emptyset

C. $\{(0,1,2)\}$

D. $\{(-1,2,-3)\}$

19) _____

Solve the problem.

20) Michael's bank contains only nickels, dimes, and quarters. There are 45 coins in all, valued at \$3.60. The number of nickels is 3 short of being three times the sum of the number of dimes and quarters together. How many dimes are in the bank?

A) 7

B) 12

C) 33

D) 5

20) _____