Name _____ Date _____

CHAPTER 1 Chapter Test B

For use after Chapter 1

Evaluate the expression.

1. $34.5x$ when $x = 4$

2. $\frac{1}{3}y$ when $y = \frac{9}{10}$

Evaluate the power.

3. 5^4

4. 1^7

5. $\left(\frac{1}{2}\right)^5$

6. You can convert temperatures in degrees Fahrenheit to degrees Celsius by using the expression $\frac{9}{5}C + 32$, where C is the temperature (in degrees Celsius). Convert 35°C to degrees Fahrenheit.

Evaluate the expression.

7. $16 \div (4 - 2) - 3$

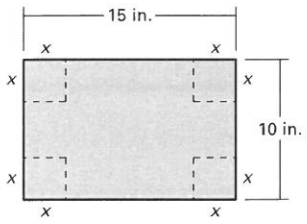
8. $3[15 - (2^3 - 6)^2]$

Evaluate the expression for the given values of the variables.

9. $3m - n$ when $m = 5$ and $n = 4$

10. $2u^2 + v$ when $u = 3$ and $v = 7$

11. A rectangular box is created by cutting out squares of equal sides of lengths x from a piece of cardboard 10 inches by 15 inches and folding up the sides as shown in the figure. The volume of the box is given by $V = x(10 - 2x)(15 - 2x)$. Find the volume of the box when the side length of the square is 3 inches.



Write an algebraic expression, an equation, or an inequality.

12. The quotient of the square of a number t and 14

13. Amount you earn if you make 6.5 dollars an hour for h hours

14. The product of 6 and the quantity 2 more than a number x is at least 45.

15. The sum of 4 and the quotient of a number k and 9 is 12.

Answers

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

Name _____ Date _____

CHAPTER 1 **Chapter Test B** *continued*
For use after Chapter 1

Check whether the given number is a solution of the equation or the inequality.

16. $7z + 8 > 20; 2$

17. $\frac{r}{5} + 15 = 20; 25$

18. A carpet outlet advertises a price of \$470.40 to carpet a 12-foot by 16-foot room. If a customer was given a price of \$725.20 for carpeting a room that is 16 feet wide, what is the length of the room?

Write a rule for the function.

19.

Input, *x*	1	3	5	7
Output, *y*	2	6	10	14

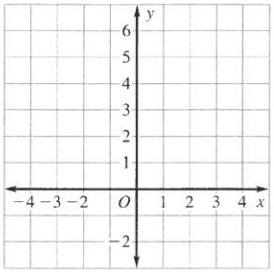
20.

Input, *x*	12	15	18	21
Output, *y*	4	5	6	7

Find the range of the function. Then graph the function.

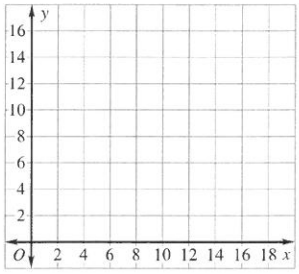
21. $y = \frac{1}{2}x + 3$

Domain: 0, 1, 2, 3, 4



22. $y = x - 6$

Domain: 10, 12, 14, 16, 18



Answers

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

See left.

22. _____

See left.

Name _____ Date _____

CHAPTER 2 Chapter Test B

For use after Chapter 2

Tell whether each number is a real number, a rational number, an irrational number, an integer, or a whole number.

1. -0.75 **2.** $\sqrt{12}$ **3.** 10

Tell whether the statement is *true* or *false*. If it is false, give a counterexample.

4. If a number is positive, then its opposite is negative.

5. If a number is an integer, then the number is an irrational number.

Order the numbers in the list from least to greatest.

6. $-\frac{1}{5}, -0.25, \frac{1}{3}, 1$ **7.** $-\frac{14}{3}, -4.6, -4.07, -4\frac{1}{3}$

Identify the property being illustrated.

8. $(x \cdot 0.5) \cdot 8 = x \cdot (0.5 \cdot 8)$

9. $x + (-y) = -y + x$

10. $2(5z - 9) = 10z - 18$

11. $3a + (-3a) = 0$

Find the sum or the difference.

12. $3 - (-12)$ **13.** $-22 + 16$

14. $-0.8 + (-8.9)$ **15.** $-16 - (-25.2)$

16. $\frac{1}{2} - \frac{7}{10}$ **17.** $7\frac{4}{5} + -2\frac{1}{4}$

In Exercises 18 and 19, use the table below.

Name	Double eagle	Eagle	Birdie	Par	Bogey	Double bogey
Score	-3	-2	-1	0	1	2

18. In golf, the best total score is the lowest score. In 4 holes, you score a birdie, a par, a double eagle, and a double bogey. Your friend scores an eagle, a double eagle, a bogey, and a par. Who has the better total score?

19. What is the difference between your friend's total score and your total score?

Answers

1. _____

_____

2. _____

_____

3. _____

_____

_____

4. _____

5. _____

6. _____

7. _____

_____

8. _____

9. _____

_____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

Name _____ Date _____

CHAPTER 2 **Chapter Test B** *continued*
For use after Chapter 2

Evaluate the expression when $x = -5.4$ and $y = 2.8$.

20. $y - x - 1.4$ **21.** $x + |y - 10|$

Find the product or the quotient.

22. $-6(-12)$ **23.** $45 \div (-3)$

24. $\frac{5}{9}\left(-\frac{3}{4}\right)$ **25.** $-7.2 \div 8$

26. $-4 \div \left(-\frac{2}{9}\right)$ **27.** $-\frac{2}{3}(18)\left(-\frac{1}{4}\right)$

28. A person buys items and sells them on a website. The table shows the profit earned for each item. Suppose that in one week the person sells 8 mantel clocks, 5 framed mirrors, and 3 candles. Find the average daily profit.

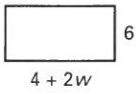
Item	Mantel clock	Framed mirror	Candle
Profit	\$4.13	−\$1.65	\$2.36

Simplify the expression.

29. $10x - (x + 3)$ **30.** $-2x(x - 6)$ **31.** $\frac{-6x + 15}{-10}$

32. Use the distributive property and mental math to find the total cost of 6 notebooks at \$3.95 each.

33. Find the perimeter and area of the rectangle with the given dimensions.



Approximate the square root to the nearest integer.

34. $\sqrt{35}$ **35.** $-\sqrt{150}$ **36.** $\sqrt{18}$

37. The area of a town's square is 14,400 square feet. Find the side length of the square.

Evaluate the expression for the given value of x.

38. $2 - \sqrt{x}$ when $x = 25$ **39.** $4\sqrt{x} + 9$ when $x = 1$

Answers

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

_____

33. _____

_____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

Name _____ Date _____

CHAPTER 3

Chapter Test B

For use after Chapter 3

Solve the equation, if posssible.

1. $-7 = -2 + x$
2. $b - \frac{2}{5} = \frac{3}{5}$
3. $-\frac{2}{3}d = 8$
4. $17 = 14 + 6y$
5. $2t - 5t = 9$
6. $13 - 9w = -14$
7. $7m - 4 - 2m = 6$
8. $\frac{3}{4}(c + 4) = 3$
9. $5(3 - 2y) + 4y = 3$
10. $4x - 1 = 2(2x + 3)$
11. $7a - 3.9a = 6.2$
12. $9 - 5z = 12 - (6z + 7)$

13. A new plasma-screen television costs $5250. A family makes a down payment of $552 and pays off the balance in 24 equal monthly payments. Write and solve an equation to find the monthly payment.

14. On a class trip, there were 45 more girls than boys. The total number of students on the trip was 211. Write and solve an equation to find the number of girls and the number of boys on the class trip.

Solve the proportion.

15. $\frac{4}{5} = \frac{12}{y}$
16. $\frac{1.1}{1.2} = \frac{w}{3.6}$
17. $\frac{16}{9} = \frac{-4t}{27}$
18. $\frac{8}{m + 3} = \frac{4}{m}$
19. $\frac{6}{x + 4} = \frac{12}{5x - 13}$
20. $\frac{5}{3z - 4} = \frac{-3}{1 - 2z}$

21. On Monday, biologists tagged 150 sunfish from a lake. On Friday, the biologists counted 12 tagged fish out of a sample of 400 sunfish from the same lake. Estimate the total number of sunfish in the lake.

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____

Name _____ Date _____

CHAPTER 3 **Chapter Test B** *continued*
For use after Chapter 3

22. A recipe for oatmeal raisin cookies calls for $1\frac{2}{3}$ cups of flour to make 4 dozen cookies. How many cups of flour are needed to make 6 dozen cookies?

Solve the percent problem.

23. 3 is 1.5% of what number?

24. 9 is what percent of 6?

25. What is 26.5% of 46?

26. 70 is 200% of what number?

27. In a renovation project, a football stadium increased its 60,000-seat capacity by 15%. How many seats will be available when the project is completed?

Write the equation in function form.

28. $5x - y = 7$

29. $10x + 3y + 2 = 9x + 8$

In Exercises 30–32, use the following information. Anthropologists can estimate the height of a woman by measuring the length of her radius bone (from the wrist to the elbow). The length of the radius bone b is given by $b = 0.26h - 18.85$ where h is the height (in centimeters) of the woman.

30. Solve the equation for h.

31. If the length of a woman's radius bone is 25 centimeters, estimate the height of the woman. Round your answer to the nearest centimeter.

32. If 1 in. = 2.54 cm, convert the woman's height to inches. Round your answer to the nearest inch.

Answers

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

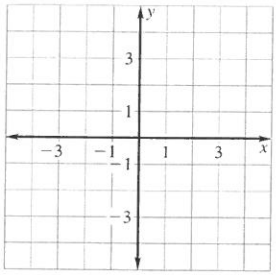
Name _____ Date _____

CHAPTER 4 Chapter Test B

For use after Chapter 4

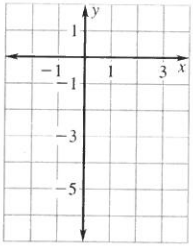
Plot the point in the coordinate plane. Describe the location of the point.

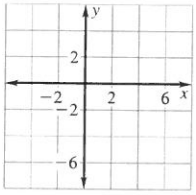
1. $A(-1, 3)$
2. $B(4, 0)$
3. $C(2, -2)$
4. $D(-1, -1)$

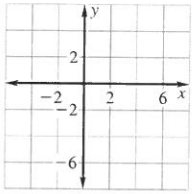


Graph the equation.

5. $3x - y = 5$
6. $3y - 2x = -3$
7. $y = -3$





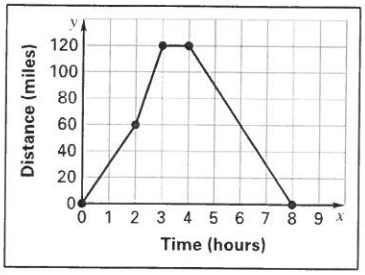


Find the *x*-intercept and the *y*-intercept of the graph of the equation.

8. $6x - 4y = 12$
9. $-2x + 5y = -10$
10. $y = \frac{1}{2}x - 2$

In Exercises 11–16, use the following information.

The graph shows the distance of a car traveling along a straight road for 8 hours. A positive velocity is motion to the right, and a negative velocity is motion to the left.



11. Determine the rates of change in distance with respect to time.
12. Between what two times is the car not moving?
13. Between what two times is the car traveling to the right?
14. Between what two times is the car traveling to the left?
15. Between what two times is the car traveling the fastest?
16. What does the *x*-intercept represent in this situation?

Answers

1. See left.
2. See left.
3. See left.
4. See left.
5. See left.
6. See left.
7. See left.
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____

Name _____ Date _____

CHAPTER 4

Chapter Test B *continued*

For use after Chapter 4

Identify the slope and *y*-intercept of the line with the given equation.

17. $y = 8x - 3$ **18.** $2x + 9y = 9$ **19.** $-3x - 4y = -16$

Determine whether the equation represents direct variation. If so, identify the constant of variation.

20. $y = -x$ **21.** $4x - 3y = 0$ **22.** $2x + y = 4$

Complete the table for the function.

23. $f(x) = 6 + x$

x	-1		0
$f(x)$		2	

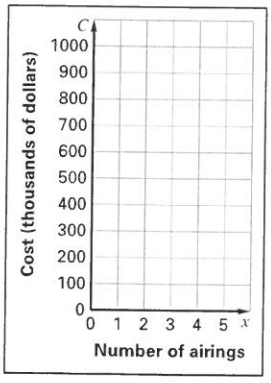
24. $f(x) = -\frac{7}{2}x$

x	0	2	
$f(x)$			

In Exercises 25–27, use the following information.

An advertising company charges \$150,000 each time a 30-second commercial is aired. The cost (in thousands of dollars) to produce the commercial and air it x times is given by the function $C(x) = 150x + 300$.

25. Graph the function.



26. Identify the domain and the range of the function.

27. How many times could a station air the commercial if the advertising company wants to spend \$900,000?

Answers

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. See left.

24. See left.

25. See left.

26. _____

_____

27. _____