Name GEOMETRY SUMMER ASSIGNMENT Date

Cumulative Test 1

Evaluate the expression.

1. $7 + 6^2 \div 3$
2. $4 \cdot 5^2 - 18$
3. $4[32 - (17 - 12)^2]$
4. $\frac{2}{3}[(5 + 3)^2 - 31]$
5. $3(5m - 4)$ when $m = -2$
6. $9x^2 - 4$ when $x = 3$

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

7. The sum of 5 times a number x and 17
8. The difference of 21 and the product of 5 and a number y is less than 7.
9. The quotient of 75 and the quantity of a number z and 2 is 25.

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

10. $5c - 13 = 12; 2$
11. $21 - 2d < 7; 6$
12. A family goes to an amusement park. Adult tickets cost \$21. Children under 10 years of age pay \$15. Write an algebraic expression for the total cost. Then find the total cost of 4 adult tickets and 3 children's tickets.

Perform the indicated operation. Write the answer with the correct number of significant digits.

13. 17.497 km + 20.82 km
14. 47.725 ft^2 8.3 ft

Approximate the square root to the nearest integer.

15. $\sqrt{125}$
16. $\sqrt{200}$
17. $-\sqrt{47}$
18. Order the numbers from least to greatest: $-1.6, \sqrt{4}, 0, 3.1, -\sqrt{5}$.

Solve the equation.

19. $\frac{m}{-6} = 8$
20. $17 = 4x - 7$
21. $9 - \frac{n}{3} = 28$
22. $16w - 10w + 13 = -5$
23. $4h - 13 = 7h + 2$
24. $\frac{2}{5}(25z - 30) = \frac{3}{4}(12z + 16)$

The perimeter *P* of a rectangle is given by the formula $P = 2\ell + 2w$ where ℓ is the length and *w* is the width.

25. Solve the formula for ℓ.
26. Use the rewritten formula to find the length of a rectangle with a width of 9 inches and a perimeter of 40 inches.

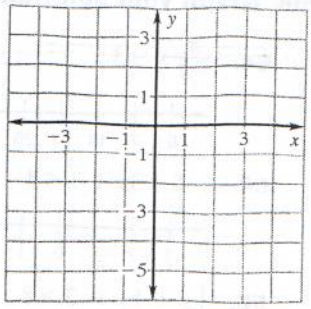
Answers

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

Name _____ Date _____

Cumulative Test 1 *continued*

42. Graph the function $h(x) = x - 4$. *Compare* the graph with the graph of $f(x) = x$.



Write an equation in slope-intercept form of the line with the given characteristics.

43. slope 3; y-intercept 5

44. $m = -2$; passes through $(-1, 5)$

45. passes through $(3, 2)$ and $(-5, -8)$

46. perpendicular to $y = -3x + 1$; passes through $(2, 2)$

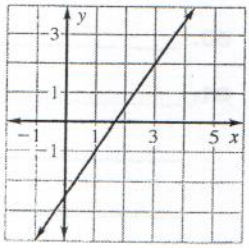
47. slope $-\frac{3}{2}$; y-intercept 1

48. $m = 4$; passes through $(-3, -2)$

49. passes through $(-2, 4)$ and $(-5, 7)$

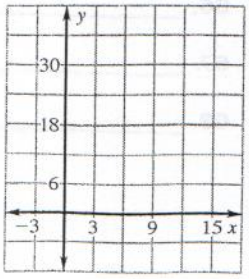
50. parallel to $y = \frac{3}{5}x - \frac{1}{5}$; passes through $(-2, 0)$

51. Write an equation in standard form of the line shown.



52. Make a scatter plot of the data in the table below. Draw a line of fit. And then write an equation of the line.

x	0	3	6	9	12
y	−2	8	14	24	36



Answers

42. _____

_____

_____

_____

_____

43. _____

44. _____

45. _____

46. _____

47. _____

48. _____

49. _____

50. _____

51. _____

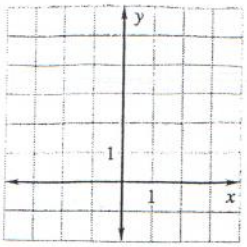
52. _____

_____

Name _____ Date _____

CHAPTERS 1–5 Cumulative Test 1

1. Graph $y = 2x^2 - 4x + 1$. Identify the vertex and axis of symmetry.



2. Factor $25x^2 - 121$.

3. Solve $x^2 - 9x - 22 = 0$ by factoring.

4. Solve the equation $4x^2 - 5x - 6 = 0$ by factoring.

5. Solve $5(x - 3)^2 = 75$ by finding square roots.

6. Write the product as a complex number in standard form.
$(3 + 2i)(4 - 5i)$

7. Write the quotient as a complex number in standard form.
$\frac{2 + i}{3 - 4i}$

8. Solve $x^2 - 5x + 2 = 0$ by completing the square.

9. Use the quadratic formula to solve the equation $3y^2 + 7y + 3 = 0$.

10. Find the value of the discriminant and give the number and type of solutions of the equation $4x^2 - 8x + 3 = 0$.

11. A rectangular picture 16 inches by 20 inches has a frame of uniform width. Find the width of the frame if the total area of the picture and the frame is 672 square inches.

12. Solve $x^2 - 5x - 24 \leq 0$ algebraically.

13. Evaluate $32^{-2/5}$.

Answers

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

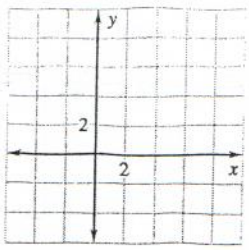
Name _____ Date _____

CHAPTERS 1–5

Cumulative Test 1

46. Graph $y = \frac{3x + 1}{2x - 4}$.

State the domain and range.



47. Write the equations of the asymptotes of $y = \frac{x}{(x - 5)^2}$.

48. Multiply $\frac{x^2 + 3x - 18}{x - 1} \cdot \frac{2x^2 - 2x}{x^3 - 3x^2}$.

49. Divide $\frac{x^2 + 2x - 35}{x^2 - 7x + 12} \div \frac{x^2 - 13x + 40}{3x^2 - 12x}$.

50. Add $\frac{1}{x + 2} + \frac{3}{x - 2}$.

51. Perform the indicated operation and simplify $\frac{8x - 1}{x^2 + x - 6} - \frac{4}{x - 2}$.

52. Solve $\frac{3}{x^2 - 9} = \frac{6}{x + 3}$.

53. Solve $\frac{x - 5}{x + 3} - \frac{2x - 7}{x + 3} = 1$.

54. Sketch a graph of $h(t)$ where h represents altitude and t represents time for the given situation. Label local minima and maxima and intervals where $h(t)$ is increasing or decreasing.

A plane flying at a constant altitude is avoiding a storm. It goes up slowly then back down below its original altitude. It then rises back to its original altitude, and later slowly descends to a landing.

55. Tell if the function $f(x) = -x^4 + 2x^2 + 6$ is even, odd, or neither.

46. See left.

47. _____

48. _____

49. _____

50. _____

51. _____

52. _____

53. _____

54. See left. Skip

55. Skip