

Geometry Summer Review Packet**Simplify:**

- _____ 1. $3 + 3(3 + 4)^3$
a. 1032 b. 9264 c. 2058 d. 91
- _____ 2. Simplify $7 \times 7 + 15 - 6 \div 2$.
a. 50 b. 61 c. 53.5 d. 29
- _____ 3. Evaluate the expression $n \times 3 + 27 \div 3$, given $n = 3$.
a. 12 b. 36 c. 18 d. 30
- _____ 4. Simplify $(7 \cdot 6^2 - 7 \cdot 3^2) \div (4 + 3)$.
a. 27 b. 243 c. 189 d. 261
- _____ 5. The total height of a building and the flagpole on the roof is 208 feet. The building is 7 times as tall as the flagpole. How tall is the building?
a. 234 feet b. 182 feet c. 156 feet d. 26 feet

Use the distributive property to write an equivalent expression.

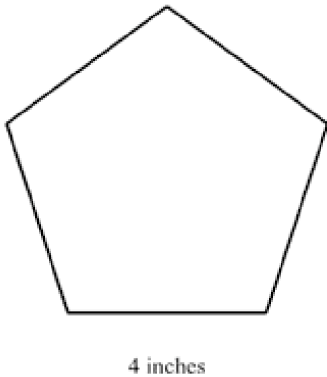
- _____ 6. $5(9x - 5y)$
a. $45x - 25y$ b. $45x + 25y$ c. $45x - 5y$ d. $9x - 5y$
- _____ 7. Which of the following is an irrational number?
a. $-\sqrt{5}$ c. 0.3858585...
b. $\frac{1}{8}$ d. $-\sqrt{64}$

Solve the equation.

- _____ 8. $10x + 2 = 72$
a. 74 b. 4 c. 7 d. 70
- _____ 9. $\frac{2}{16}y - 65 = 0$
a. 520 b. 2080 c. -520 d. -2080
- _____ 10. $-1.1x - 4 = 0.8$
a. 5.90 b. -5.27 c. 2.91 d. -4.36
- _____ 11. The perimeter of a rectangular garden is 860 ft. The two short sides of the garden are each 30 ft long. You are asked to find the length of the other sides. Which equation models this situation?
a. $30 + x = 860$ c. $30(x - 2) = 860$
b. $2(30) + 2x = 860$ d. $30 + 2x = 860$

Solve the equation.

- _____ 12. $-3x + 25 + x + 21 = 2$
a. 22 b. -3 c. -22 d. 3
- _____ 13. $8x - 9 = x + 9$
a. $\frac{18}{7}$ b. $-\frac{18}{7}$ c. $\frac{7}{18}$ d. $\frac{1}{8}$
- _____ 14. $\frac{3}{n} = \frac{36}{4}$
a. 12 b. $\frac{1}{9}$ c. 3 d. $\frac{1}{3}$
- _____ 15. $\frac{y}{2} = \frac{6}{24}$
a. 2 b. $\frac{1}{4}$ c. $\frac{1}{2}$ d. 12
- _____ 16. The figure below represents a building in the shape of a pentagon. Using the scale 1 inch = 94 feet, what is the perimeter of the building?



- a. 376 feet c. 1880 feet
b. 470 feet d. 1504 feet
- _____ 17. Solve $z = \frac{9}{13}c$ for c .
a. $c = \frac{9}{13}z$ c. $c = -\frac{9}{13}z$
b. $c = -\frac{13}{9}z$ d. $c = \frac{13}{9}z$

_____ 18. Solve $y = \frac{5}{8}b + 10$ for b .

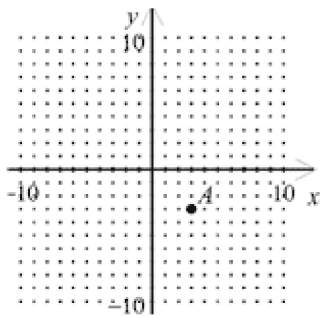
a. $b = -\frac{8}{5}y + 16$

c. $b = \frac{5}{8}y - 10$

b. $b = \frac{8}{5}y - 16$

d. $b = -\frac{5}{8}y + 10$

_____ 19. What are the coordinates of point A ?



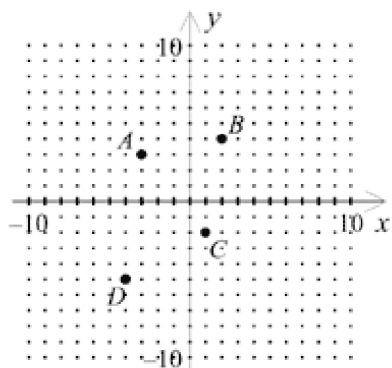
a. $(3, -3)$

c. $(-3, 3)$

b. $(3, 3)$

d. $(-3, -3)$

_____ 20. Name the coordinates of the points A , B , C , and D .



a. $A(3, -3), B(4, 2), C(-2, 1), D(-5, -4)$

b. $A(-3, 3), B(4, 2), C(1, -2), D(-5, -4)$

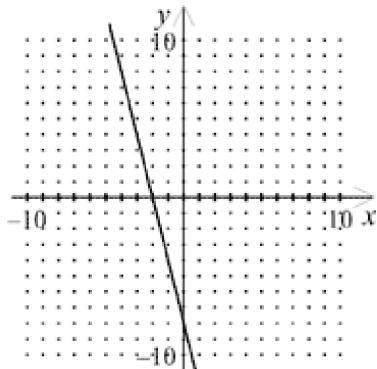
c. $A(3, -3), B(2, 4), C(-2, 1), D(-4, -5)$

d. $A(-3, 3), B(2, 4), C(1, -2), D(-4, -5)$

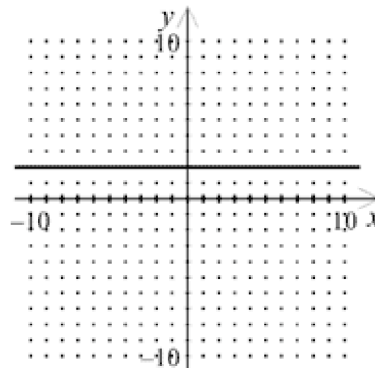
Graph the equation.

_____ 21. $4x - 8 = 0$

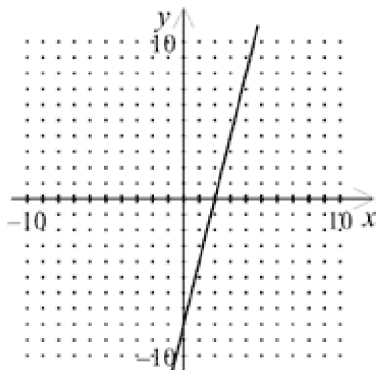
a.



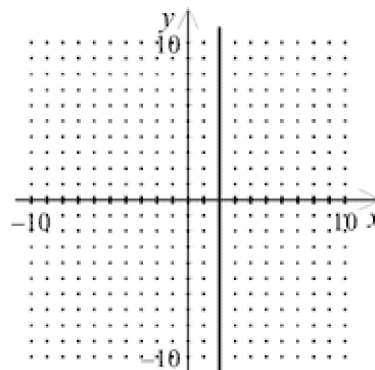
c.



b.



d.



_____ 22. State the x - and y -intercepts of the line with the equation $y = -2x + 4$.

- a. x -intercept: 4; y -intercept: 2
 b. x -intercept: 2; y -intercept: 4
 c. x -intercept: -4; y -intercept: -2
 d. x -intercept: -2; y -intercept: -4

_____ 23. Find the slope of the line that contains $(-8, 2)$ and $(7, -4)$.

- a. $-\frac{2}{5}$ b. $-\frac{5}{2}$ c. 0 d. undefined

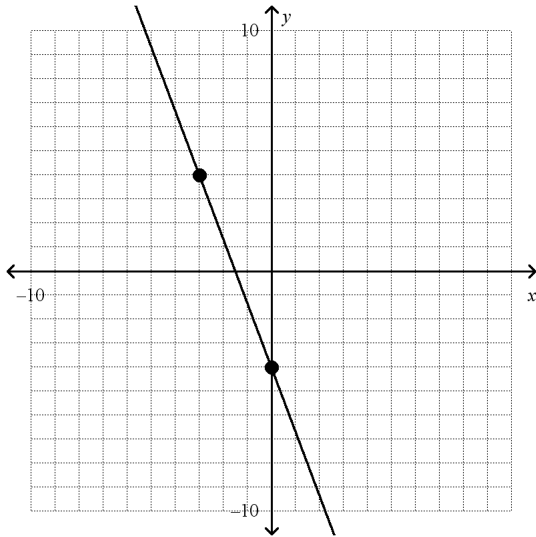
_____ 24. Find the slope of the line passing through the points $A(-1, 1)$ and $B(4, -5)$.

- a. $-\frac{6}{5}$ b. $\frac{4}{3}$ c. $\frac{3}{4}$ d. $-\frac{5}{6}$

_____ 25. Find the slope and y -intercept of the line with the equation $-9x + 3y = 54$.

- a. $m = 3, b = 18$ c. $m = -3, b = -18$
 b. $m = 18, b = 3$ d. $m = -18, b = -3$

_____ 26. Write an equation in slope-intercept form of the graph.



a. $y = -\frac{8}{3}x - 4$

c. $y = -\frac{3}{8}x - 4$

b. $y = \frac{8}{3}x - 4$

d. $y = \frac{3}{8}x - 4$

_____ 27. Write an equation, in slope-intercept form, that passes through point $(-4, -3)$ with slope 3.

a. $y = 3x + 9$

c. $y = -3x + 9$

b. $y = 3x - 15$

d. $y = -3x - 15$

_____ 28. Write an equation of the line that goes through the point $(3, 7)$ and is perpendicular to the line $y = -3x + 6$.

a. $y = \frac{1}{3}x + 6$

c. $y = 3x + 2$

b. $y = -\frac{1}{3}x + 6$

d. $y = -3x + 16$

_____ 29. Write an equation of the line that passes through $(-5, -1)$ and is parallel to the line $y = 4x - 6$.

a. $y = 4x + 19$

c. $y = -5x + 19$

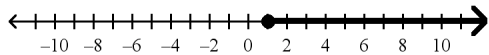
b. $y = 4x - 6$

d. $y = -5x - 6$

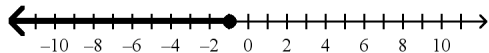
Solve and graph.

_____ 30. $-7(4x - 3) \leq -7$

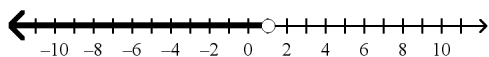
a. $x \geq 1$



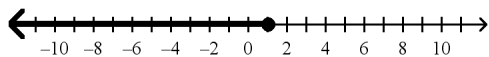
b. $x \leq -1$



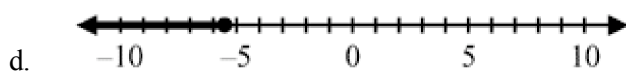
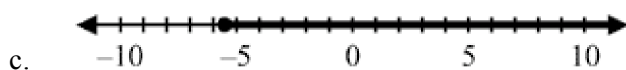
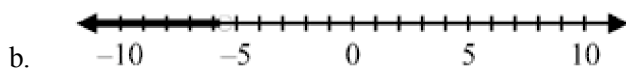
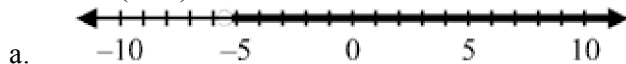
c. $x < 1$



d. $x \leq 1$

**Solve and graph the inequality.**

_____ 31. $5x + 2 < 3(x - 3)$

**Solve.**

_____ 32. $13b - 6 \leq 14b + 8$

a. $b \geq 2$

b. $b \geq -14$

c. $b \leq 14$

d. $b = 2$

Solve.

_____ 33. $|4x + 2| = 3$

a. $\frac{1}{4}, -\frac{5}{4}$

b. $-\frac{1}{4}, -\frac{5}{4}$

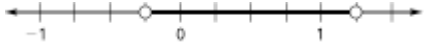
c. $-\frac{1}{4}, \frac{3}{4}$

d. $-2, \frac{3}{4}$

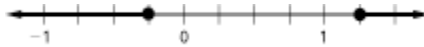
Solve. Graph your solution.

_____ 34. $|4x-2| < 3$

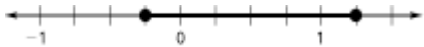
a. $-\frac{1}{4} < x < \frac{5}{4}$



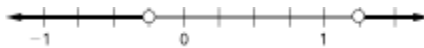
b. $x \leq -\frac{1}{4}$ or $x \geq \frac{5}{4}$



c. $-\frac{1}{4} \leq x \leq \frac{5}{4}$

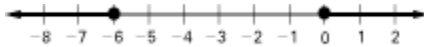


d. $x < -\frac{1}{4}$ or $x > \frac{5}{4}$

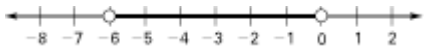


_____ 35. $|x+3| \geq 3$

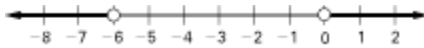
a. $x \leq -6$ or $x \geq 0$



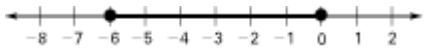
b. $-6 < x < 0$



c. $x < -6$ or $x > 0$



d. $-6 \leq x \leq 0$



_____ 36. Solve the system:

$$3x + 2y = -4$$

$$y = 4x - 2$$

- a. $(0, -2)$ b. no solution c. $(2, 6)$ d. $(-1, -\frac{1}{2})$

_____ 37. Solve the system:

$$y = x + 8$$

$$y = 9x$$

- a. $(1, 9)$ b. $(-1, 7)$ c. $(0, 8)$ d. $(-7, -63)$

_____ 38. Solve the system:

$$3x + 6y = 9$$

$$x - 6y = 11$$

- a. $(5, -1)$ b. $(0, \frac{3}{2})$ c. $(10, -\frac{1}{6})$ d. no solution

Simplify:_____ 39. $(wc^7)(-8w^3c^5)$

- a. $-8w^4c^{12}$ c. $-8w^4c^{11}$
b. $-8w^3c^{12}$ d. $-8w^3c^{11}$

_____ 40. $r^4 \cdot r^5 \cdot r^6$

- a. r^{120} b. $3r^{120}$ c. r^{15} d. $3r^{15}$

_____ 41. $(4t^2r^4)^3$

- a. $64t^6r^{12}$ c. $-64t^5r^7$
b. $-64t^6r^{12}$ d. $12t^5r^7$

_____ 42. $2^2 + 9 + 7^0$

- a. 252 b. 36 c. 14 d. 20

_____ 43. Write 0.000732 in scientific notation.

- a. 732×10^{-6} c. 0.732×10^{-3}
b. 732×10^{-5} d. 7.32×10^{-4}

_____ 44. Write 2,239 in scientific notation.

- a. 2.239×10^3 c. 22.39×10^2
b. 2.239×10^4 d. 2.2390×10^1

Find the difference.

_____ 45. $(6b^3 + 3b^2 + 8) - (2b^3 - 8b^2 + 6b - 5)$

a. $4b^3 + 11b^2 - 6b + 13$

b. $4b^3 + 11b^2 + 6b - 13$

c. $11b^3 - 4b^2 - 6b + 3$

d. $11b^3 + 4b^2 - 6b - 3$

Find the sum.

_____ 46. $(2a^7 + 3a^3 - 6) + (-2a^3 + 4 + 6a^7)$

a. $8a^7 + a^3 - 2$

b. $a^7 + 8a^3 - 2$

c. $a^7 + 8a^3 + 2$

d. $8a^7 + a^3 + 2$

Find the product.

_____ 47. $(4x + 1)(4x - 3)$

a. $16x^2 + 8x - 3$

b. $16x^2 - 8x + 3$

c. $16x^2 - 8x - 3$

d. $16x^2 - 16x - 3$

_____ 48. $(x + 5)(x + 2)$

a. $x^2 + 7x + 10$

b. $x^2 - 7x - 10$

c. $x^2 - 7x + 10$

d. $x^2 + 7x - 10$

_____ 49. A rectangle has a length of $x + 5$ and a width of $x - 7$. Write an equation that describes the area, A , of the rectangle in terms of x .

a. $A = x^2 - 2x - 35$

b. $A = x^2 + 12x - 35$

c. $A = 2x - 2$

d. $A = 2x + 12$

Find the product.

_____ 50. $(5c + 6)(5c - 6)$

a. $25c^2 - 36$

b. $25c^2 + 36$

c. $25c^2 + 60c - 36$

d. $25c^2 + 60c + 36$

_____ 51. $(5x^2 - 5)^2$

a. $25x^4 - 25$

b. $25x^2 - 10x + 25$

c. $25x^4 - 50x^2 + 25$

d. $25x^4 - 50x^2 - 25$

Factor the polynomial.

_____ 52. $x^2 + 6x + 5$

a. $(x + 1)(x - 5)$

b. $(x - 1)(x - 5)$

c. $(x + 1)(x + 5)$

d. $(x - 1)(x + 5)$

53. Factor the polynomial.

$25x^2 - 15x + 2$

54. $3x^2 - 19x + 6$

55. $x^2 - 3x - 10$

Solve the equation.

_____ 56. $25x^2 - 9 = 0$

a. $-\frac{5}{3}, \frac{5}{3}$

b. $-\frac{3}{5}, \frac{3}{5}$

c. $-\frac{9}{25}, \frac{9}{25}$

d. $-\frac{25}{9}, \frac{25}{9}$

_____ 57. Simplify:

$7\sqrt{6} + 8\sqrt{6} - 3\sqrt{6}$

a. $\sqrt{72}$

b. $12\sqrt{6}$

c. 72

d. $18\sqrt{6}$

_____ 58. $2\sqrt{6} - \sqrt{81} - 4\sqrt{24}$

a. $-6\sqrt{6} - 9$

c. $-5\sqrt{24}$

b. $-11\sqrt{6} - 9 - 4\sqrt{24}$

d. $-15\sqrt{6}$

Simplify:

_____ 59. $\sqrt{300}$

a. $10\sqrt{30}$

b. $10\sqrt{3}$

c. $\sqrt{30}$

d. $3\sqrt{10}$

_____ 60. $\sqrt{10} \cdot \sqrt{4}$

a. $2\sqrt{10}$

c. $2\sqrt{5}$

b. $4\sqrt{5}$

d. $\sqrt{40}$

_____ 61. $11\sqrt{25}$

a. 137.5

b. 16

c. 55

d. 27.5

_____ 62. $\sqrt{\frac{49}{100}}$

a. $\frac{7}{50}$

b. $\frac{3}{4}$

c. $\frac{7}{100}$

d. $\frac{7}{10}$

_____ 63. Find the midpoint of (4, 16) and (9, -2).

a. $(\frac{13}{2}, 7)$

c. $(10, \frac{7}{2})$

b. (13, 14)

d. (-13, -14)

_____ 70. What is the value of $\frac{a-2b+3}{5}$ when $a = 3$ and $b = -4$?

- a. $-\frac{2}{5}$
- b. $-\frac{7}{5}$
- c. $\frac{14}{5}$
- d. 1

_____ 71. If $\frac{2}{5}x = -\frac{10}{13}$, then $x = ?$.

- a. $-\frac{4}{13}$
- b. $-\frac{13}{25}$
- c. $-\frac{25}{13}$
- d. $-\frac{13}{4}$

_____ 72. Solve the equation $\frac{2}{3}x + 5 = 13$.

- a. 6
- b. 8
- c. 12
- d. 27

_____ 73. If $2x - 4(3 - x) = 18$, then $x = ?$.

- a. -15
- b. -3
- c. 1
- d. 5

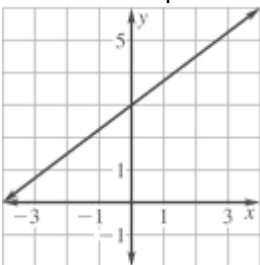
_____ 74. Find the value of x if $6(2 - x) + 4x = -5(x + 3)$.

- a. $-\frac{9}{5}$
- b. $-\frac{7}{3}$
- c. $-\frac{27}{7}$
- d. -9

_____ 75. What is the y -intercept of $3x + 2y = 21$?

- a. $\frac{21}{2}$
- b. 14
- c. $\frac{2}{21}$
- d. 7

_____ 76. What is an equation of the line shown?



- a. $y = -\frac{3}{4}x + 3$
- b. $y = \frac{3}{4}x + 3$
- c. $y = -\frac{4}{3}x + 4$
- d. $y = \frac{4}{3}x - 4$

_____ 77. Find the slope of the line passing through $(-3, -6)$ and $(7, -2)$.

- a. -2
- b. 1
- c. $\frac{4}{5}$
- d. $\frac{2}{5}$

_____ 78. What is an equation of the line that passes through the points $(-3, 4)$ and $(-9, 6)$?

- a. $y = -\frac{1}{3}x - \frac{5}{3}$
- b. $y = -\frac{1}{3}x + 3$
- c. $y = -3x - 5$
- d. $y = -3x + 12$

_____ 79. An equation of the line parallel to the line $y = \frac{1}{3}x - 2$ and passing through $(3, -5)$ is _____.

- a. $y = -3x + 4$
- b. $y = \frac{1}{3}x + \frac{14}{3}$
- c. $y = -3x - 12$
- d. $y = \frac{1}{3}x - 6$

- _____ 80. An equation of the line perpendicular to the line $y = -\frac{3}{4}x + 4$ with a y -intercept of -5 is _____.
- a. $y = -\frac{3}{4}x - 5$ b. $y = \frac{3}{4}x - 5$ c. $y = \frac{4}{3}x - 5$ d. $y = -\frac{4}{3}x + 5$
- _____ 81. Which inequality is equivalent to $-5x + 4 \leq -2x + 7$?
- a. $x \leq 1$
b. $x \geq 1$
c. $x \leq -1$
d. $x \geq -1$
- _____ 82. At what point do the lines $5x + y = 19$ and $-x + 2y = -6$ intersect?
- a. $(0, -3)$
b. $(2, 0)$
c. $(3, 4)$
d. $(4, -1)$
- _____ 83. Simplify $\left[(1 + x^2) \right]^3$ when $x = 2$.
- a. 33
b. 65
c. 125
d. 721
- _____ 84. Which of the following is a solution of the equation $\frac{3}{4}x^2 - 13 = 14$?
- a. $\frac{9}{2}$ b. $\sqrt{27}$ c. -6 d. $\frac{2}{\sqrt{3}}$
- _____ 85. What is the distance between $(-2, 3)$ and $(3, -4)$?
- a. $\sqrt{2}$
b. $2\sqrt{2}$
c. $\sqrt{26}$
d. $\sqrt{74}$