

Algebra 2 Honors

Preliminary Test Review

Name: _____

Period: _____ Date: _____

1. If $3x + 6 = 0$, what is the value of $x + 7$?

2. For $\frac{a+bt}{c} = m$, solve for t .

3. Given $f(x) = x^3 - 3$, find each value.

a. $f(-2)$

b. $f(2t)$

4. Solve.

a. $|x + 3| = 5$

b. $|6 - 4t| + 5 = 0$

5. Solve and graph.

a. $10 \leq 3y - 2 < 19$

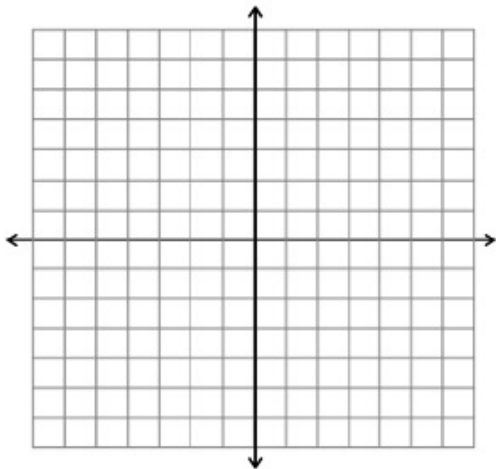
b. $|2y - 2| \leq 4$

c. $|3x - 4| > 10$

6. Find the x-intercept and the y-intercept of the graph of $3x - 5y = -15$

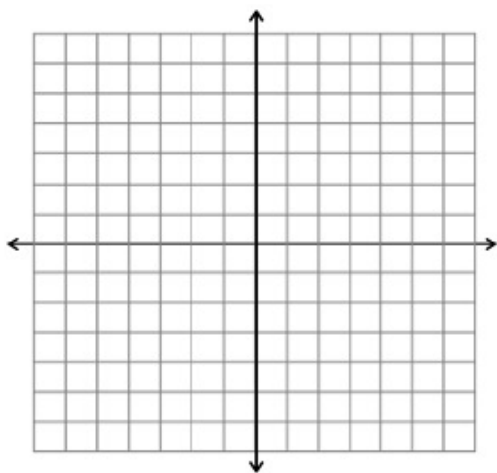
7. If point A(3, 1) and B(2, -3), what is the slope of line AB?

8. Graph $y + 3x = 4$

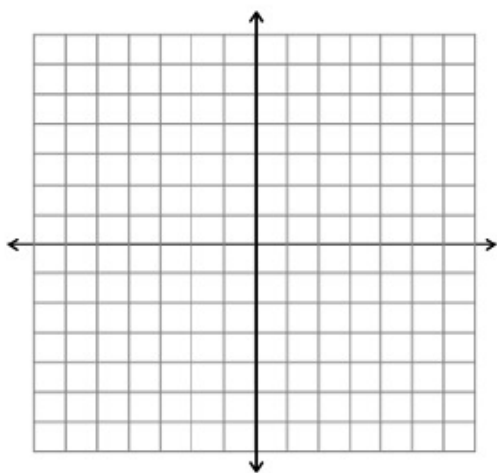


9. Graph

a. $x = 3$



b. $y = 2$



10. Write an equation of line that has a slope of $-\frac{1}{3}$ and passes through $(3, -1)$.

11. Write an equation of a line parallel to $y = 3x$ and passes through $(2, 8)$.

12. Write an equation in slope-intercept form for the line that passes through (3, -2) and is perpendicular to the line with equation $y = -5x + 1$.

13. Solve the system of equation.

a. $x + 2y = 5$
 $3x - 2y = 7$

b. $y = 3x$ and $4x - 2y = 5$

14. Simplify. Answer must be written with positive exponents.

a. $(2x^4y^2)^3$

b. $\frac{(x^2y^3)^5}{x^7y^9}$

c. $(4x^6y^{-2})(8x^{-3}y^4)$

d. $\left(\frac{15x^{-3}y^4}{5x^{-8}y^7}\right)^4$

e. $\frac{x^{-5}y^9}{(x^{-2}y^2)^{-3}}$

15. Add or subtract. $(y^2 - 6y + 2) - (3y^2 + 7y - 1)$

16. Multiply.

a. $3x^2(x^2 - 4xy + y)$

b. $(x - 2)(x^2 - 2)$

c. $(2x - 3)^2$

17. Factor completely.

a. $x^2 - 4x + 4$

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

c. $9x^2 - 12x + 4$

d. $x^2 - 4$

e. $x^4 - 625$

f. $3x^2 - x - 2$

g. $3x^2 - 75$

h. $2ac + ad + 6bc + 3bd$

i. $6x^2 + 20x - 16$

18. Solve.

a. $(x - 5)(3x + 4) = 0$

b. $n^3 + 2n^2 - 35n = 0$

c. $x^2 - 8x + 11 = 0$ (Use the Quadratic Formula.)

19. Simplify.

a. $\sqrt{45x^{16}y^7}$

b. $5\sqrt{8}(2\sqrt{18} + 3\sqrt{10})$

c. $\sqrt{48} - \sqrt{12}$

20. Rationalize the denominator.

a. $\frac{8}{\sqrt{7}}$

b. $\frac{5}{\sqrt{14}-2}$

21. Solve $\sqrt{8x+1} - 5 = 0$

22. Add or subtract. $\frac{4x}{4} - \frac{x+4}{3}$

23. Find the least common denominator (LCD).

a. $\frac{3}{2x-4} + \frac{x}{x+2}$

b. $\frac{1}{x^2-x-2} - \frac{x}{x^2-5x-6}$

24. Simplify. $\frac{x^2-9}{x+2} \div \frac{x^2+x-6}{x^2-4}$

25. Solve.

a. $\frac{1}{2} - \frac{2}{3} = -\frac{3y}{4}$

b. $\frac{4}{x-1} = \frac{2}{3}$

26. A new computer is being discounted 15%. If the original price was \$1,565, what is the new price?
27. I have 15 coins in my pocket. They are all either dimes or quarters. The value of the coins is \$3.15. How many of each coin do I have?
28. $\triangle ABC$ is a right triangle, where angle C is the right angle. Find the missing side length if $a = 15$ cm, $c = 39$ cm.