BECA / Dr. Huson / Geometry
19 November 2018
Homework: Algebra & graphing review Name:

Simplify by collecting like terms.

1. $2x^2 + 13x - 12 - 2x^2 - 3x + 5$

2. $3(a^2 - 2a + 7) - 2(a^2 - 3a - 10)$

3. $(a + 7)(3a - 1)$

Solve for the value of x.

4. $-9 = \frac{3}{4}x$

5. $\frac{2}{3}(3x - 6) = -2x$

What is the slope and y-intercept of each equation?

6. $y = -3.4x - 1.8$

7. $5x + 2y = 8$

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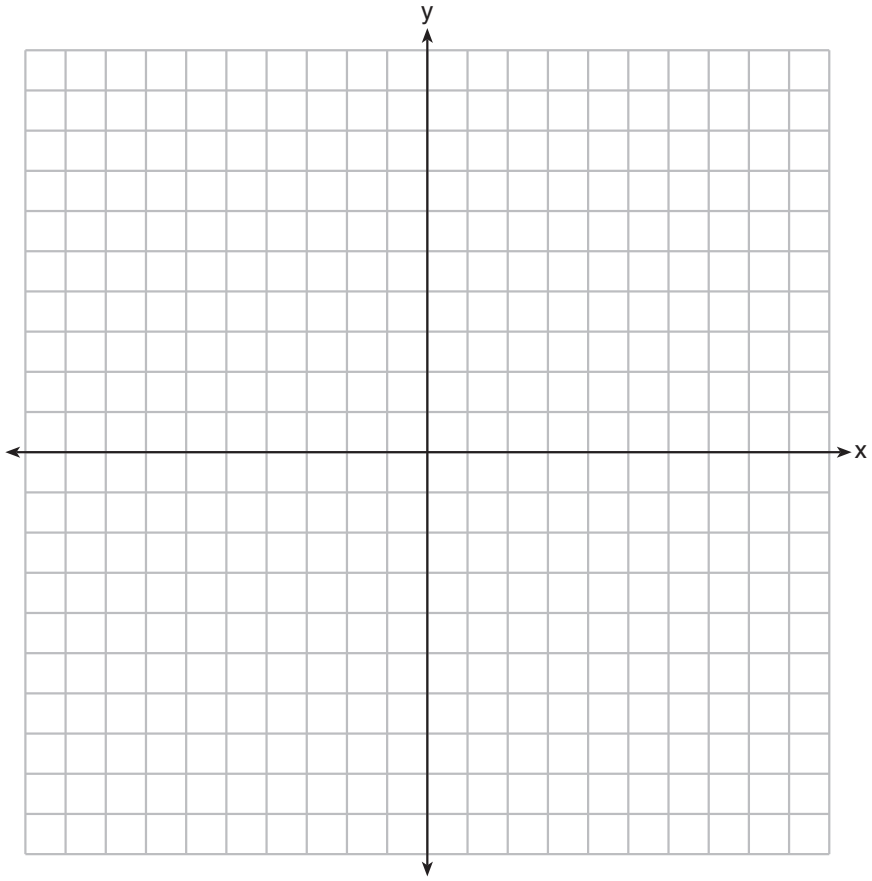
Use pencil for graphs. Label each function with its name or equation.

8. Given the function $f(x) = \frac{2}{5}x - 5$.
   (a) Draw the function $f(x)$ on the graph below.
   (b) Mark and label the point $P(3, 2)$ on the graph.
   (c) A second line, $g(x)$, is perpendicular to $f(x)$ and passes through point P. Plot $g(x)$ on the graph.
   (d) Challenge: what is the exact value of the y-intercept of $g(x)$?



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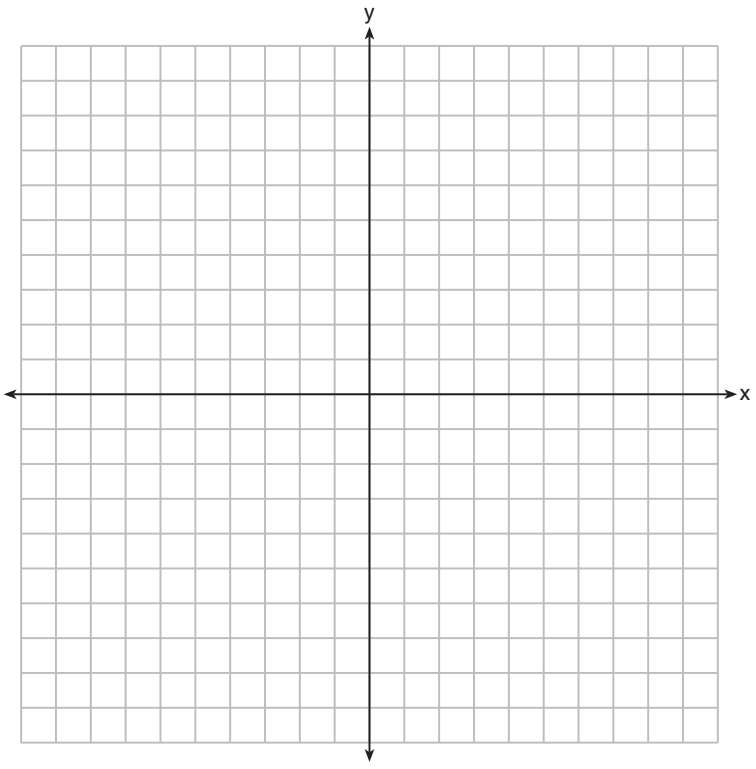
9. Explain why the radical $\sqrt[3]{5^2}$ is equivalent to $25^{\frac{1}{3}}$, an expression with a rational exponent.

10. Solve the system of equations by graphing. Select a point in the solution set and label it on the graph as ordered pair.

$$x + 4y \geq -8$$

$$y < \frac{1}{2}x - 4$$



Solve the system algebraically.

11. $3x + 4y = 15$
$3x + y = 3$

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12. Given the function $f(x) = x^2 - x - 12$.
    (a) Make a table of x values from -5 to +5 versus $f(x)$
    (b) Draw the function $f(x)$ on the graph below.
    (c) Challenge: what is the exact value of the y-intercept of $g(x)$?