Name:_____   **Date:**_____

Solve.

1. $\dfrac{2}{3}x - 4 = -10$

2. $\dfrac{-x}{3} = 5$

3. $3(k - 6) = 15 + 3k$

4. Rewrite the equation $3x + 12y = 12$ in slope-intercept form.

5. Write the equation in slope-intercept form of the line passing through (3, 6) and (−1, 5).

6. Graph the solution to the equation $5 - x < 9$.

7. Solve the following systems using any method of choice.

    a. $x + 2y = 7$ b. $y = x - 7$
               $3x - 2y = 5$ $x + 4y = -8$

8. Find the slope of the line parallel to the line that passes through the points $(5, 8)$ and $(-1, -4)$.

9. Find the slope of the line perpendicular to the line $-5x - y = 8$.

Find the sum, difference or product.

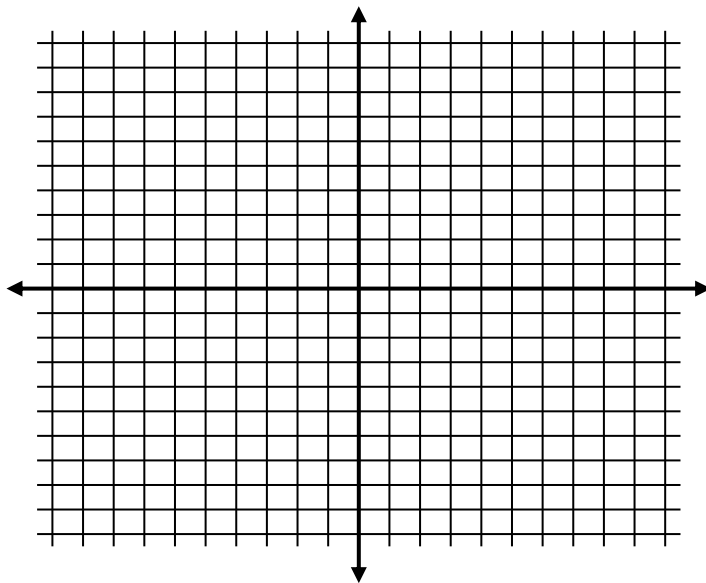**10.** $(2x^2 + 14x - 9) - (7x^2 - 12)$

11. $(2x + 7)^2$

12. $(2x^6 \cdot 3x^4)^2$

13. Solve the system of inequalities by graphing.
$x < 5$
$y \geq 2x - 1$

14. Find the length of a leg of a right triangle whose other leg is 24 inches and whose hypotenuse is 30 inches.

Simplify.

15. $\left(\dfrac{-5x^{-5}y^7}{10xy^0} \right)^3$

16. $\dfrac{2x^9y^{-2}}{x^{-2}y^0}$

Factor completely.

17. $-24a^4b^2 - 15a^3b^5 + 3a^4b$

18. $3x^2 + 8x + 5$

Solve each equation.

19. $(5x + 4)(x - 9) = 0$

20. $2x^2 + x - 3 = 0$

21. $2x^2 + 14x = -24$

22. $\dfrac{x+5}{2} = \dfrac{x-3}{4}$