

Simplify all answers and show your work.

1. Write the equation of the line through the point $(-3, 4)$ and with slope $\frac{2}{5}$.

2. Write the equation of the line through the point $(9, 8)$ and parallel to the line $x - 2y = 10$.

3. What is the slope of a line that is perpendicular to the line given by $3x + 7y = -2$?

4. Graph the inequality $x - 3y \leq -3$

5. Given $f(x) = 3x - 5$, find $f(-2)$
6. Given $f(x) = x^2 + 1$, find $f(x - 2)$

7. Write the equation of the line that passes through the points $(1, 2)$ and $(3, 4)$.

8. Solve the system of equations:
$$\begin{cases} 3x - y = -15 \\ 4x + 5y = -1 \end{cases}$$

9. Solve the system of equations:
$$\begin{cases} x + y + z = 5 \\ 2x - y + z = 6 \\ x + 2y - z = -3 \end{cases}$$

10. Solve the system of equations:
$$\begin{cases} 2x + y = 19 \\ y = 10 - x \end{cases}$$

11. Kelly has 36 coins in her purse, only nickels and quarters. She has eight more quarters than nickels. If she has a total of \$6.20, how many nickels and quarters does she have?

12. Solve the determinant $\begin{vmatrix} 2 & -4 \\ 3 & 5 \end{vmatrix}$

13. Solve the determinant $\begin{vmatrix} 0 & -1 & 3 \\ 4 & 5 & 4 \\ 2 & -2 & 0 \end{vmatrix}$