

Unit 6- Part 1 Review: Parallel/Perpendicular Lines and Systems of Equations

Are the line parallel, perpendicular, or neither?

1. $y = 7x - 3$
 $y = \frac{-1}{6}x + 10$

Neither

2. $y = x + 9$
 $y = -x + 7$

Perpendicular

3. $8x - 2y = 3$
 $x + 4y = -1$

Perpendicular

4. $y = 3x + 2$
 $2y = 6x - 10$

Parallel

5. $y = 6$
 $x = -2$

Perpendicular

6. $3y = -x$
 $3x = y$

Perpendicular

7. Which of the following lines is **parallel** to $y = -\frac{5}{7}x + 2$?

A.) $y + \frac{5}{7}x = -5$

B.) $y = \frac{5}{7}x + 6$

C.) $y = -\frac{7}{5}x - 3$

D.) $y - \frac{5}{7}x = 9$

8. Which of the following lines is **perpendicular** to $y = \frac{2}{3}x - 7$?

A.) $y = -\frac{2}{3}x - 7$

B.) $y = \frac{3}{2}x + 2$

C.) $y = -\frac{3}{2}x + 7$

D.) $y = \frac{2}{3}x + 1$

9. The line $y = -\frac{1}{2}x + 3$ is **perpendicular** to which line?

A.) $y = -\frac{1}{2}x + 6$

B.) $y = 2x - 3$

C.) $y = \frac{1}{2}x + 1$

D.) $y = -2x$

10. Fill in the chart

Type of Solution	What it looks like using Elimination/Substitution	What it looks like using Graphing
Ordered pair (x, y)	You will find x and y values	Two lines will intersect @ a point
No Solution (\emptyset)	No variables False statement $(2 \neq 0)$	Parallel Lines
Infinite Solutions (\mathbb{R})	No variables True statement $(2 = 2)$	Same Lines

A.REI.C.6 – I can Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

Solve the system of equations using **substitution**.

$$\begin{aligned} 10.) \quad & 3x + 2y = 10 \\ & x + y = 10 \end{aligned}$$

$$(-10, 20)$$

$$\begin{aligned} 11.) \quad & y = 3x - 4 \\ & -6x + 2y = -8 \end{aligned}$$

Infinite Solutions: \mathbb{R}

Solve the system of equations using **elimination**.

$$\begin{aligned} 12.) \quad & -3x + 5y = 45 \\ & 3x + 13y = 9 \end{aligned}$$

$$(-10, 3)$$

$$\begin{aligned} 13.) \quad & x - 2y = 16 \\ & 2x - 4y = 8 \end{aligned}$$

No Solution: \emptyset

$$\begin{aligned} 14.) \quad & 4x - 3y = 8 \\ & 2x + y = 14 \end{aligned}$$

$$(5, 4)$$

$$\begin{aligned} 15.) \quad & 4x + 5y = 22 \\ & 5x - y = 13 \end{aligned}$$

$$(3, 2)$$

Solve the system of equations using **any** method.

$$16.) \begin{cases} y = x + 2 \\ 2x + y = 11 \end{cases}$$

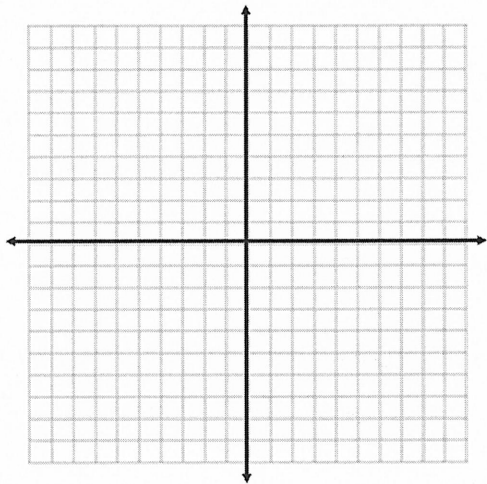
$(3, 5)$

$$17.) \begin{cases} 3x - 2y = 1 \\ 4y = 7 + 3x \end{cases}$$

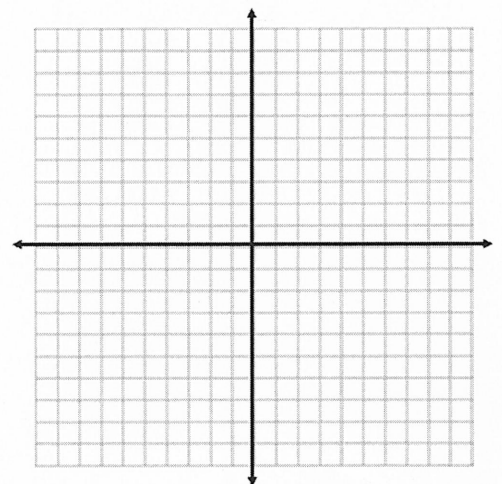
$(3, 4)$

Solve the system of equations by using **graphing**.

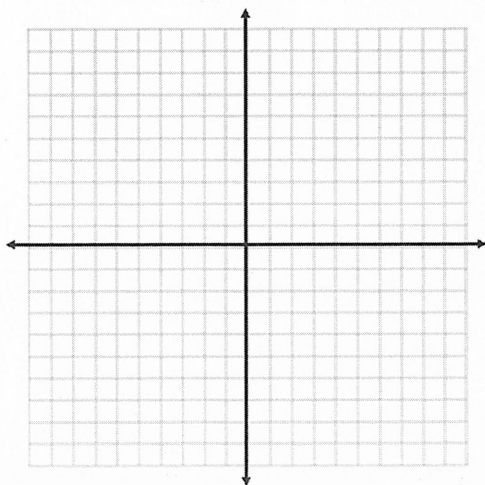
$$18.) \begin{cases} y = 2x - 1 \\ y = \frac{1}{2}x + 2 \end{cases} \quad (2, 3)$$



$$19.) \begin{cases} -2y = -x - 6 \\ 3x - y = 7 \end{cases} \quad (4, 5)$$



$$20.) \begin{cases} y = 3x - 4 \\ y = -\frac{1}{2}x + 3 \end{cases} \quad (2, 2)$$



$$21.) \begin{cases} -3x + 4y = 24 \\ y = 3 \end{cases} \quad (-4, 3)$$

