

Unit 5: Linear Relationships

ADVANCED

Name: _____ Date: _____

Show all your work. Give each answer as an exact value — a number, a fraction like $\frac{3}{4}$, or a coordinate pair like $(3, -4)$. Do not round.

1. Find the slope of the line passing through the points $(-4, 7)$ and $(6, -13)$.

Answer: _____

2. The quantity y is proportional to x . When $x = \frac{2}{3}$, $y = \frac{5}{6}$. Find the constant of proportionality k .

Answer: _____

3. A line has slope $-\frac{3}{4}$ and passes through the point $(8, -1)$. Find its y -intercept b .

Answer: _____

4. Solve the system by elimination: $3x + 4y = 10$ and $5x - 2y = 8$. Give the solution as an ordered pair (x, y) .

Answer: _____

5. Solve the system: $2x + 3y = 5$ and $4x - y = 17$. Give the solution as an ordered pair (x, y) .

Answer: _____

6. For what value of k are the lines $y = 3x - 2$ and $y = (k + 1)x + 5$ parallel?

Answer: _____

7. The quantity y is proportional to x , and $y = 45$ when $x = 20$. Find the value of y when $x = 12$.

Answer: _____

8. A line passes through $(-2, 5)$ and $(4, -4)$. Find the value of y on this line when $x = 10$.

Answer: _____

9. Solve the system: $7x + 2y = -1$ and $3x + 2y = 7$. Give the solution as an ordered pair (x, y) .

Answer: _____

10. Find the x -intercept of the line $2x - 5y = 30$. Give the x -value only.

Answer: _____

11. Solve the system: $8x - 5y = 11$ and $6x + 5y = 45$. Give the solution as an ordered pair (x, y) .

Answer: _____

12. Find the slope of the line passing through the points $(\frac{1}{2}, 3)$ and $(\frac{5}{2}, 11)$.

Answer: _____