

PROBLEM SET 2-2
(Linear Equations)

Find the slope of the line through each pair of points.

1. (1,6) and (8,-1)

2. (0,0) and (2,6)

3. (-2,-1) and (8,-3)

4. $\left(\frac{2}{3}, \frac{4}{7}\right)$ and $\left(\frac{2}{3}, \frac{11}{7}\right)$

5. (-5,-7) and (0,10)

6. $\left(\frac{3}{2}, -\frac{1}{2}\right)$ and $\left(-\frac{2}{3}, \frac{1}{3}\right)$

7. $\left(0, \frac{1}{2}\right)$ and $\left(\frac{5}{7}, 0\right)$

Find the slope of each line.

8. $3x - 2y = -7$

9. $Ax + By = C$

10. $y = 0$

Write the equation of each line in standard form:

11. slope = $\frac{5}{6}$; contains (22,12)

12. slope = 0; contains (4,-2)

13. slope = 5; contains (0,2)

14. Contains (1,0) and (5,5)

15. Contains (0,-1) and (3,-5)

16. Contains (1,9) and (6,2)

17. through (-3,-1) and perpendicular to $2x + 5y = -20$

18. through $\left(1, -\frac{2}{7}\right)$ and vertical

Graph the following:

19. $y = -2x + 3$

20. $2x - 3y = 12$

21. $4x - 3y = -6$

22. $\frac{1}{5}x - \frac{3}{5}y = \frac{6}{5}$

23. $y = \begin{cases} x + 4, & \text{if } x \leq -2 \\ -x, & \text{if } x > -2 \end{cases}$

24. $f(x) = \begin{cases} -2x + 1, & \text{if } x < 3 \\ x - 8, & \text{if } x \geq 3 \end{cases}$