

Linear Functions Review

Sketch each linear function. Show the points you used to draw each line.

y-Intercept Form: $y = mx + b$

- Identify the slope m and the y-intercept b .
- Plot the y-intercept at $(0, b)$.
- Use the slope $m = \frac{\text{rise}}{\text{run}}$ to plot a second point.
- Draw the line through the points.

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

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

3. $y = \frac{3}{4}x - 2$

4. $y = -\frac{5}{2}x + 4$

5. $y = 2x + 1$

6. $y = 3x - 2$

7. $y = -2x + 4$

8. $y = -x - 3$

General Form: $Ax + By = C$

- Find the y-intercept: set $x = 0$ and calculate y .
- Find the x-intercept: set $y = 0$ and solve for x .
- Plot both intercepts.
- Draw the line connecting them.

9. $x + y - 4 = 0$

10. $2x + y - 6 = 0$

11. $x + 2y - 6 = 0$

12. $3x + 2y - 12 = 0$

13. $2x - 3y - 6 = 0$

14. $4x + 3y + 12 = 0$

15. $3x - 4y + 6 = 0$

16. $5x + 2y - 10 = 0$

Point-Slope Form: $y - y_1 = m(x - x_1)$

- Identify the point (x_1, y_1) and the slope m .
- Plot the point on the graph.
- Use the slope $m = \frac{\text{rise}}{\text{run}}$ to plot a second point.
- Draw the line through the points.

17. $y - 2 = 2(x - 1)$

18. $y - 3 = -2(x - 1)$

19. $y + 2 = 3(x - 2)$

20. $y - 1 = -\frac{1}{2}(x - 3)$

21. $y + 3 = \frac{2}{3}(x - 1)$

22. $y - 4 = -\frac{3}{2}(x + 2)$

23. $y + 1 = \frac{4}{3}(x + 2)$

24. $y - 2 = -\frac{5}{4}(x - 3)$

Mixed Review

25. $2x + 5y - 10 = 0$

26. $y + 4 = 2(x - 3)$

27. $y = \frac{3}{2}x - 4$

28. $3x - 2y + 12 = 0$