Day 3 – Writing Equations of Lines

Writing an equation of a line given m and b.
    A. Substitute slope for m and y-intercept for b.
    B. Simplify the equation.

> **Slope Intercept Form:**
> **$y = mx + b$**
> Where "m" is the slope and "b" is the
> y – intercept.

1. Slope is -5 and y-intercept is 2.

2. Slope is -1/2 and y-intercept is -2.

3. Slope is 0 and y-intercept is 3.
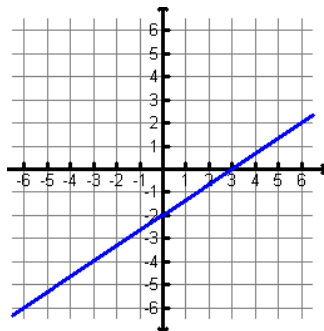
4. Slope is 1/3 and y-intercept is 0.

Writing an equation of a line <u>given a graph</u>.
    A. Use any 2 "good" points on the graph to find the slope, m. (you may use the slope formula or Rise/Run)
    B. Find the y-intercept on the graph, b.
    C. Substitute slope for m and y-intercept for b into the equation $y = mx + b$.
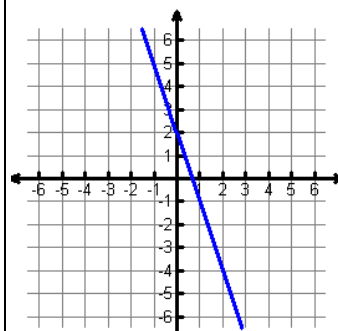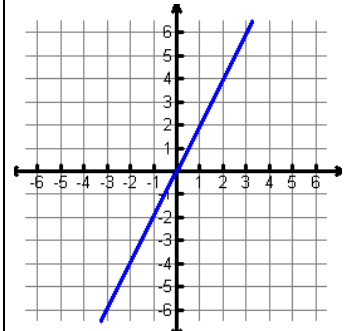
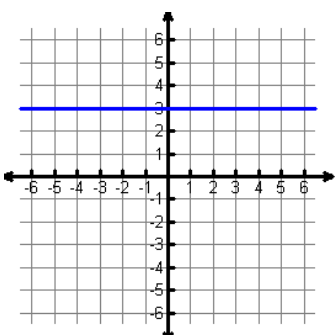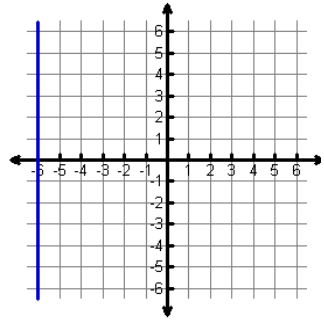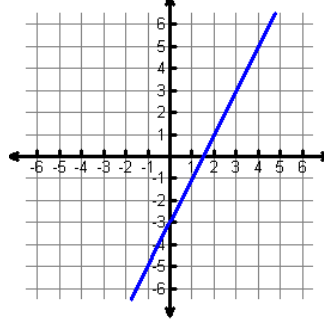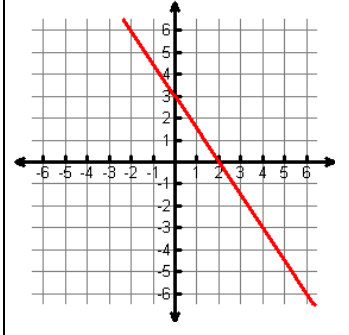5.
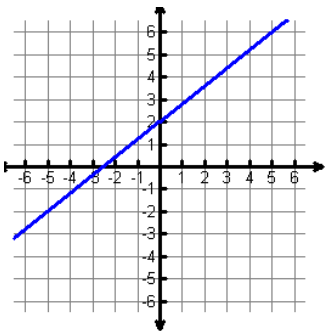
6.

7.

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11.

12.

Writing an equation of a line <u>given m and a point</u>.
    A. Substitute slope for m and the point (x, y) into y=mx+b and solve for b.
    B. Substitute m and b back into the equation.

13. m = 2 and Point: (2, 3)	14. m = 1/2 and Point: (4, -3)
15. m = -2 and Point: (-5, 3)	16. m = 4 and Point (1, 4)
17. m = ½ and Point: (-1, -2)	18. m = 2 and Point (0, 3)
19. m =3 and Point: (3, 0)	20. m = undefined and Point (3, 6)

Writing an equation of a line <u>given TWO points</u>.
    A. Use the slope formula to find m.
    B. Pick one point, substitute slope for m, the point (x, y) and then solve for b.
    C. Substitute m and b back into the equation.

Slope Formula:
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

21. (2, 3) and (4, 5)	22. (2, 3) and (-4, 15)	23. (2, 2) and (0, 4)
24. (2, 3) and (1, 4)	25. (4, 5) and (5, 2)	