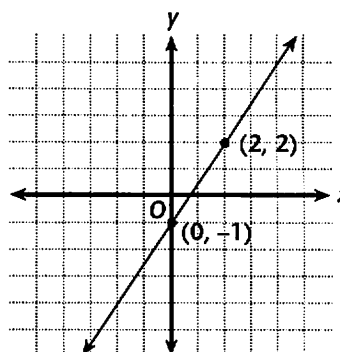
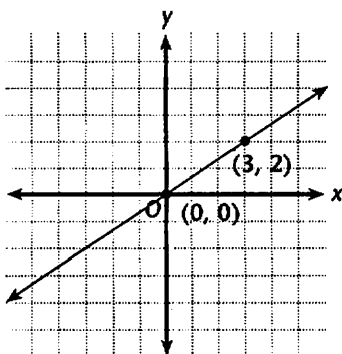


◆ Skill B Writing the equation of a graphed line in the slope-intercept form**Recall** The slope of the line containing (x_1, y_1) and (x_2, y_2) is given by $\frac{y_2 - y_1}{x_2 - x_1}$.**◆ Example**

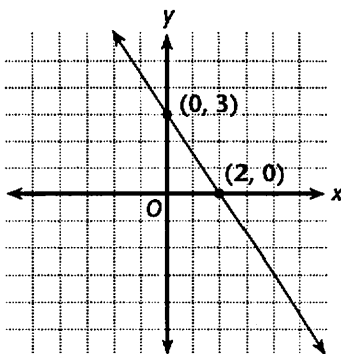
Write an equation for the line shown at right.

◆ SolutionThe line crosses the y -axis at $(0, -1)$. Therefore, the y -intercept is -1 .The slope is $\frac{2 - (-1)}{2 - 0} = \frac{3}{2}$.The equation is $y = \frac{3}{2}x - 1$.**Write an equation in slope-intercept form for each line.**

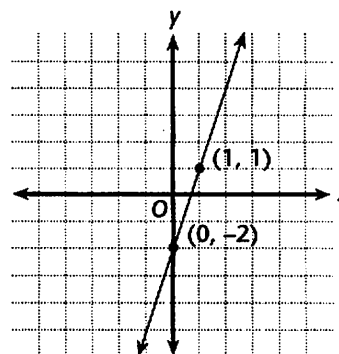
7.



8.



9.

**◆ Skill C** Finding the x - and y -intercepts of the graph of a linear equation**Recall** A line crosses the x -axis when $y = 0$; a line crosses the y -axis when $x = 0$.**◆ Example**Find the x - and y -intercepts for the line given by $2x + y = 6$.**◆ Solution**

$$\begin{aligned} \text{Let } x &= 0. \\ 2(0) + y &= 6 \\ y &= 6 \end{aligned}$$

$$\begin{aligned} \text{Let } y &= 0. \\ 2x + 0 &= 6 \\ x &= 3 \end{aligned}$$

The x -intercept is 3 and the y -intercept is 6.**Find the x - and y -intercepts.**

10. $x - 2y = 8$ _____

11. $-x + y = 5$ _____

12. $2x + 3y = 12$ _____

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

14. $y = \frac{1}{2}x + 4$ _____

15. $y = -2$ _____



Reteaching

1.2 Slopes and Intercepts

◆ Skill A Graphing a linear equation using the slope and y-intercept

Recall The slope-intercept form of a line is $y = mx + b$, where m is the slope and b is the y-intercept.

◆ Example

Graph the line with the equation $2x - y = -1$.

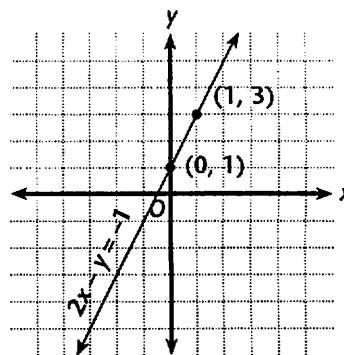
◆ Solution

Solve for y . Write the equation in the form $y = 2x + 1$.

When $x = 0$, then $y = 1$; the y-intercept is 1. Graph the point $(0, 1)$.

The slope of 2 indicates that $\frac{\text{rise}}{\text{run}} = \frac{2}{1}$.

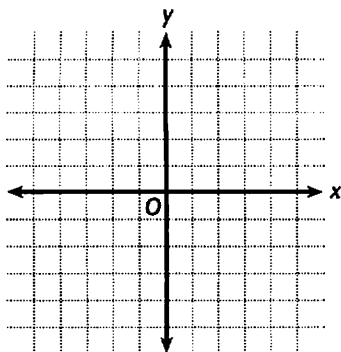
From the point $(0, 1)$ "rise" 2 units and "run" to the right 1 unit to locate the point $(1, 3)$.



Find the slope, m , and y-intercept, b , for each line. Then graph.

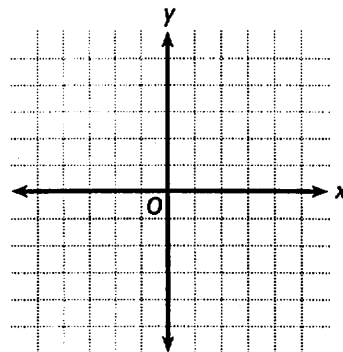
1. $y = x + 2$

m : _____ b : _____



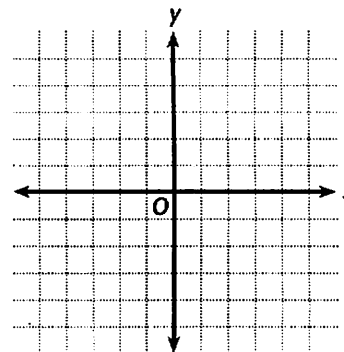
2. $y = 2x$

m : _____ b : _____



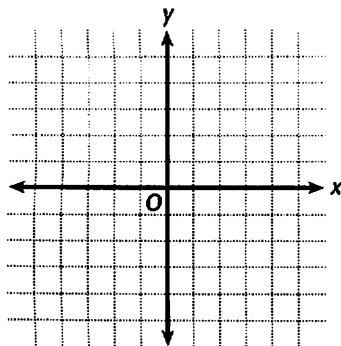
3. $x + y = 4$

m : _____ b : _____



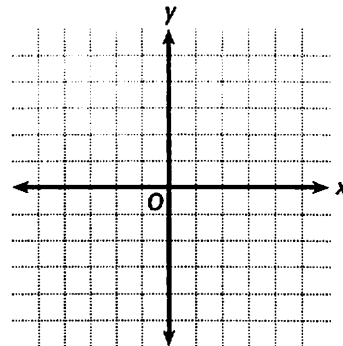
4. $x + 2y = 6$

m : _____ b : _____



5. $x - y = 1$

m : _____ b : _____



6. $2x + y = -1$

m : _____ b : _____

