

Linear equations using slope-intercept form

Writing Linear Equations

Remember, the slope-intercept form of a linear equation is $y = mx + b$, where m is the slope and b is the y -intercept. To write an equation of a line in this form, you would need the slope and the y -intercept of the line.

$$m = 2, y\text{-int.} = 4$$

$$y = mx + b$$

$$y = 2x + 4$$

$$m = -4, y\text{-int.} = -9$$

$$y = mx + b$$

$$y = -4x - 9$$

$$m = -1, y\text{-int.} = 11$$

$$y = mx + b$$

$$y = -x + 11$$

Note: In the third example, the slope is -1 . Only $-x$ is written. If the slope was 1 , only x would be written. The coefficient 1 is simply understood to be there and usually is not written.

State the slope and y -intercept of each line below.

1. $y = -2x + 5$

2. $y = -8x$

3. $2 + y = -x$

4. $-9 + y = x$

5. $y = 7$

6. $y = 2x - 7$

7. $-6 + y = 4x$

8. $y = -x$

Write an equation of the line given its slope and y -intercept.

9. $m = 4, y\text{-int.} = -1$

10. $m = 0, y\text{-int.} = 7$

11. $m = -2, y\text{-int.} = -5$

12. $m = -\frac{1}{4}, y\text{-int.} = -3$

13. $m = \frac{1}{2}, y\text{-int.} = -6$

14. $m = -1, y\text{-int.} = 8$

15. $m = 1, y\text{-int.} = 2$

16. $m = 4, y\text{-int.} = 0$

17. What is the name of the $y = mx + b$ form of an equation of a line?

18. Is 7 the x -intercept or y -intercept of the line $y = -4x + 7$?

