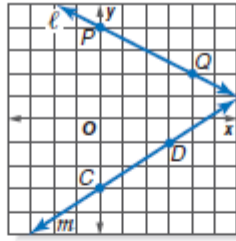


3.3 Slopes of Lines (2, 3, 8, 21)

Find the slope of each line.

1. ℓ
2. m



MOUNTAIN BIKING For Exercises 3–5, use the following information.

A certain mountain bike trail has a section of trail with a grade of 8%.

3. What is the slope of the hill?
4. After riding on the trail, a biker is 120 meters below her original starting position. If her starting position is represented by the origin on a coordinate plane, what are possible coordinates of her current position?
5. How far has she traveled down the hill? Round to the nearest meter.
6. Determine whether \overrightarrow{GH} and \overrightarrow{RS} are *parallel*, *perpendicular*, or *neither* given $G(15, -9)$, $H(9, -9)$, $R(-4, -1)$, and $S(3, -1)$.

Graph the line that satisfies each condition.

7. slope = 2, contains $P(1, 2)$
8. contains $A(6, 4)$, perpendicular to \overrightarrow{MN} with $M(5, 0)$ and $N(1, 2)$

3.4 Equations of Lines (1-3, 8, 10-18)

Write an equation in slope-intercept form of the line having the given slope and y -intercept.

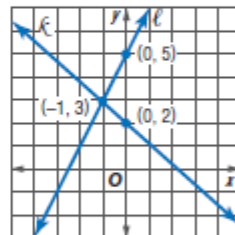
- | | | |
|----------------------|--------------------|-----------------------------|
| 1. $m = \frac{1}{2}$ | 2. $m = 3$ | 3. $m = -\frac{3}{5}$ |
| y -intercept: 4 | y -intercept: -4 | y -intercept at $(0, -2)$ |

Write an equation in point-slope form of the line having the given slope that contains the given point.

- | | | |
|----------------------------------|-----------------------|-------------------------------|
| 4. $m = \frac{3}{2}$, $(4, -1)$ | 5. $m = 3$, $(7, 5)$ | 6. $m = 1.25$, $(20, 137.5)$ |
|----------------------------------|-----------------------|-------------------------------|

Write an equation in slope-intercept form for each line in the graph.

7. ℓ
8. k
9. the line parallel to ℓ that contains $(4, 4)$
10. the line perpendicular to ℓ that contains $(2, -1)$



MUSIC For Exercises 11 and 12, use the following information.

Justin pays \$5 per month for a subscription to an online music service. He pays \$0.79 per song that he downloads. Another online music store offers 40 downloads per month for a monthly fee of \$10.

11. Write an equation to represent the total monthly cost for each plan.
12. If Justin downloads 15 songs per month, should he keep his current plan, or change to the other plan? Explain.

21. RECREATION Paintball is one of the fastest growing sports. In 2002, 1,949,000 Americans from 12–17 years old participated in paintball. In 2005, 2,209,000 participated. If participation increases at the same rate, what will the participation be in 2012 to the nearest thousand?

Write an equation in slope-intercept form of the line having the given slope and y -intercept.

- | | | |
|--|-----------------------|----------------------------------|
| 13. $m: 3$, y -intercept: -4 | 14. $m: 2$, $(0, 8)$ | 15. $m: \frac{5}{8}$, $(0, -6)$ |
| 16. $m: \frac{2}{9}$, y -intercept: $\frac{1}{3}$ | 17. $m: -1$, $b: -3$ | 18. $m: -\frac{1}{12}$, $b: 1$ |