Name Key Period A B C D E F Date

# Module 2 Topic 2 - Lessons 3-6 Review

**Essential Standard: I can identify the slope of given scenarios and interpret its meaning.**

**1.** Geoff is training for a charity bike ride. He rides **49 miles** in **3.5 hours**. Complete the following questions.

**a. What are the Independent and Dependent Variables? (2 pts)**

Independent variable (x) - # of hours

Dependent variable (y) - distance (miles)

**b. Complete the table and list the two ordered pairs. (2 pts)**

| # of hours | distance (miles) |
|---|---|
| 0 | 0 |
| 3.5 | 49 |

Two ordered pairs: (0, 0) (3.5, 49)

**c. Calculate the slope and explain what it means in the context of this problem. (4 pts)**

$$m = \frac{49-0}{3.5-0} = \frac{49}{3.5} = \frac{14}{1} \frac{\text{miles}}{\text{hour}}$$

Slope = $\frac{14}{1}$

What does it mean? Geoff rides 14 miles in one hour.

**2.** A taxi charges a pick-up fee of **$2.75** before going any distance. Marie paid **$9** for **5-mile** ride. What is the rate of cost per mile?

**a. List the two ordered pairs. (2 pts)** (miles, $)

Two ordered pairs: (0, 2.75) (5, 9)

**b. Calculate the slope and explain what it means in the context of this problem. (4 pts)**

$$m = \frac{9-2.75}{5-0} = \frac{6.25}{5} = \frac{1.25}{1} \frac{(\$)}{\text{mile}}$$

Slope = $\frac{1.25}{1}$

What does it mean? The taxi charges $1.25 per mile.

**c. What is the y-intercept and what does it mean in the context of this problem? (2 pts)**

The y-intercept of 2.75 means the taxi charges $2.75 fee.

## Essential Standard: **I can find the slope from two points and a table.**

3-6. Find the slope for the following questions. (2 pts each)

**3.** (-2, 6) and (5, -8)

$m = \frac{-8-6}{5-(-2)} = \frac{-14}{5+2} = \frac{-14}{7} = -2$

Slope = $-2$

**4.** (4, 9) and (4, -1)

$m = \frac{-1-9}{4-4} = \frac{-10}{0}$

Slope = Undefined

**5.**

| x | y |
|---|---|
| 0 | -7 |
| 12 | -7 |
| -4 | -7 |

$\frac{-7-(-7)}{12-0} = \frac{-7+7}{12} = 0$

Slope = $0$

**6.**

| x | y |
|---|---|
| 0 | -8 |
| -12 | -5 |
| 4 | -9 |

$\frac{-5-(-8)}{-12-0} = \frac{-5+8}{-12} = \frac{3}{-12} = -\frac{1}{4}$

Slope = $-\frac{1}{4}$

## Essential Standard: **I can find write linear equations in slope-intercept form.**

7-8. Write the slope-intercept form for the line passing through the given points. (4 pts each)

**7.** (3, 5) and (-1, -7)

$m = \frac{-7-5}{-1-3} = \frac{-12}{-4} = 3$

Slope (m) = $3$

$y = 3x + b$

$5 = 3(3) + b$

$5 = 9 + b$

$-4 = b$

y-intercept (b) = $(0, -4)$

Equation: $y = 3x - 4$

**8.** (-4, 3) and (-4, 8)

$m = \frac{8-3}{-4-(-4)} = \frac{5}{0}$

Slope (m) = undefined

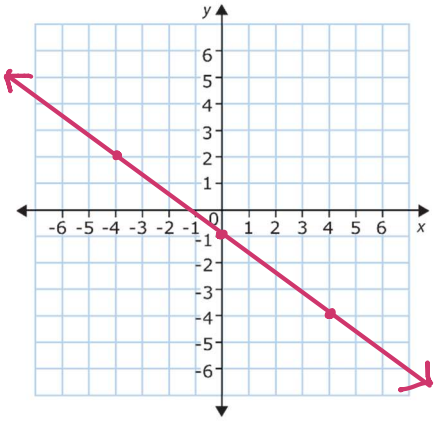
y-intercept (b) = none

Equation: $x = -4$

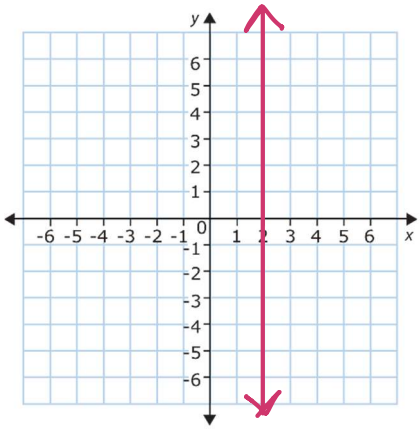
Essential Standard: **I can graph equations written in slope-intercept form.**

9-12. Graph the following linear equations. (2 pts each)

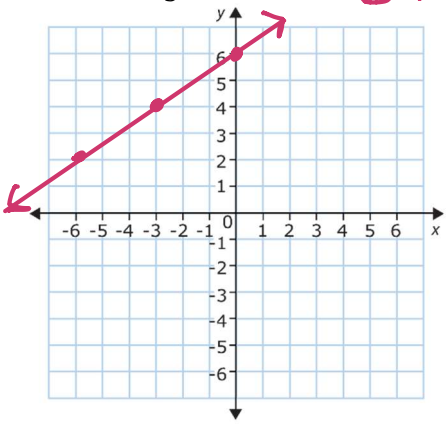
9. $y = -\frac{3}{4}x - 1$ $m = \frac{-3}{4}$ ↓ → $b = -1$



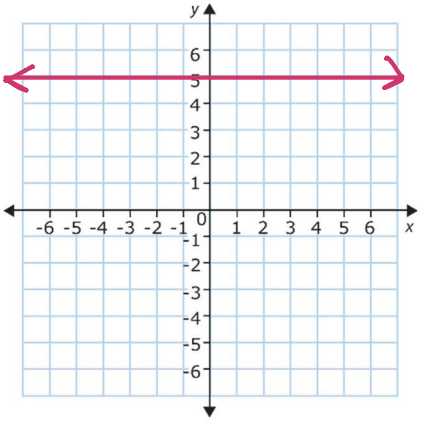
10. $x = -2$



11. $y = \frac{2}{3}x + 6$ $m = \frac{2}{3}$ ↑ → $b = 6$



12. $y = 5$



b

13. Charlotte and Tanner are filling up their community pool for swimming. The pool already has **3 feet** of water and the filling rate is **3 feet for every 2 hour**. Write an equation for this situation and graph the equation.

m

Let X = time (hours)

Let Y = water level

Slope (m) = $\frac{3}{2}$

y-intercept (b) = 3

Equation: $y = \frac{3}{2}x + 3$