Unit 4

Review

5.1 - Ratios and Rates

RATIO

A comparison of two quantities using division

RATE

A ratio of two quantities with different units

UNIT RATE

A rate with a denominator of 1

Finding Ratios and Rates

There are 15 orangutans and 25 gorillas in a nature preserve.

1. **Find the ratio of orangutans to gorillas in simplest form.**

One of the orangutans swings 75 feet in 15 seconds on a rope.

2. **Find the unit rate of how fast the orangutan is swinging.**

5.2 - Proportions

Methods to check if proportional

Multiply a number to numerator and denominator one ratio to make it equal to the other one	Simplify both ratios to simplest form
Convert each into decimals	Cross-Multiply. The cross-products should be equal to each other.

Tell Whether the Ratios Form a Proportion:

3) $\frac{4}{9}, \frac{2}{3}$

4) $\frac{32}{40}, \frac{12}{15}$

5.3 – Writing Proportions

Use the Table to Write a Proportion

	Friday	Saturday
Sales	40	85
Returns	32	r

5.4 – Solving Proportions

Solve the Proportion

6) $\frac{x}{4} = \frac{2}{5}$

7) $\frac{x+1}{4} = \frac{4}{8}$

5.5 – Slope

Slope is the ratio of the vertical change and the horizontal change.

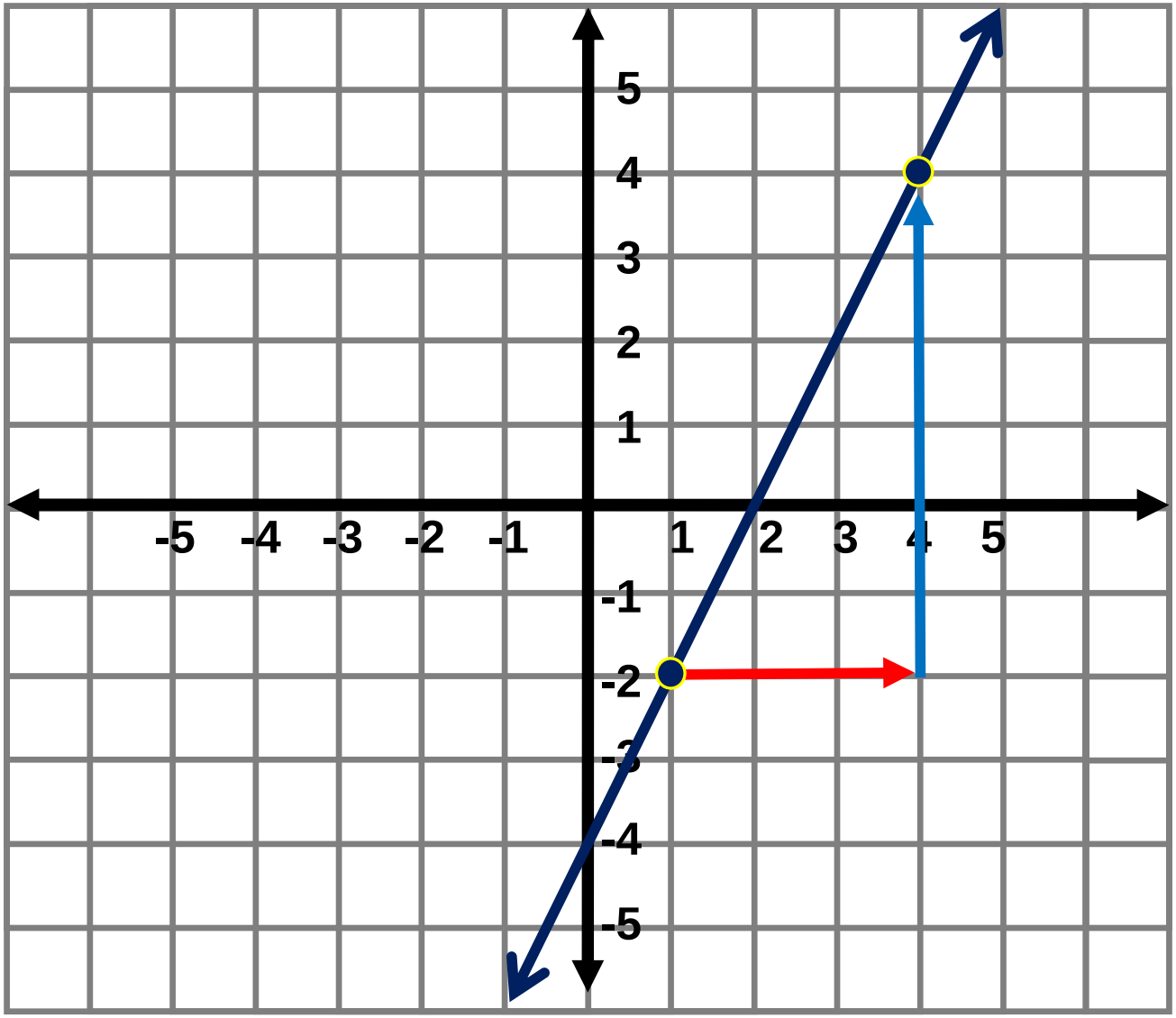
Another name of slope is the _____ _____ _____

Slope = $\frac{\text{vertical change}}{\text{horizontal change}}$

Slope = $\frac{\text{rise}}{\text{run}}$

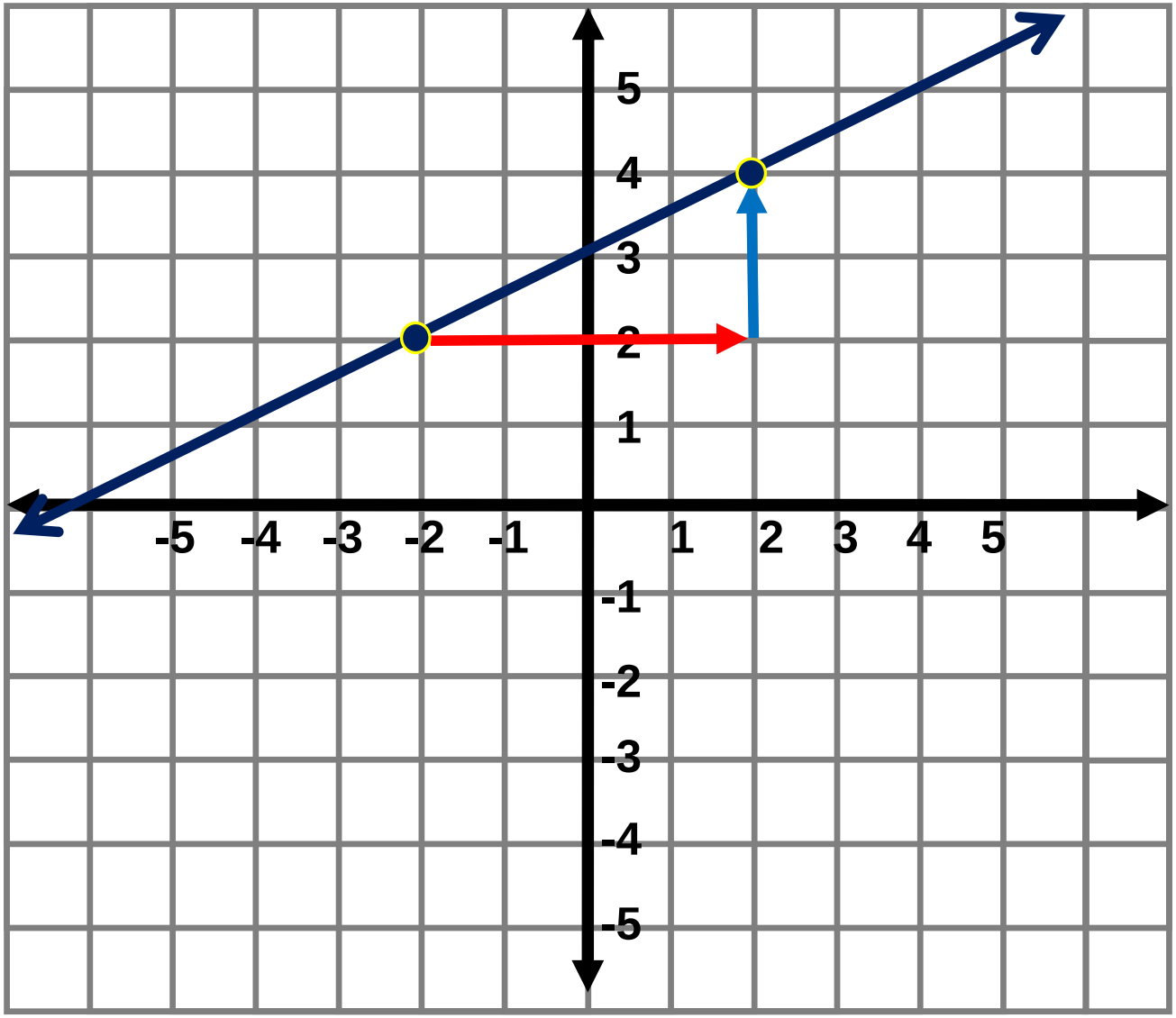
Slope = $\frac{\text{change in } y}{\text{change in } x}$

5.5 – Slope



$$slope = \frac{change\ of\ y}{change\ of\ x}$$

5.5 – Slope

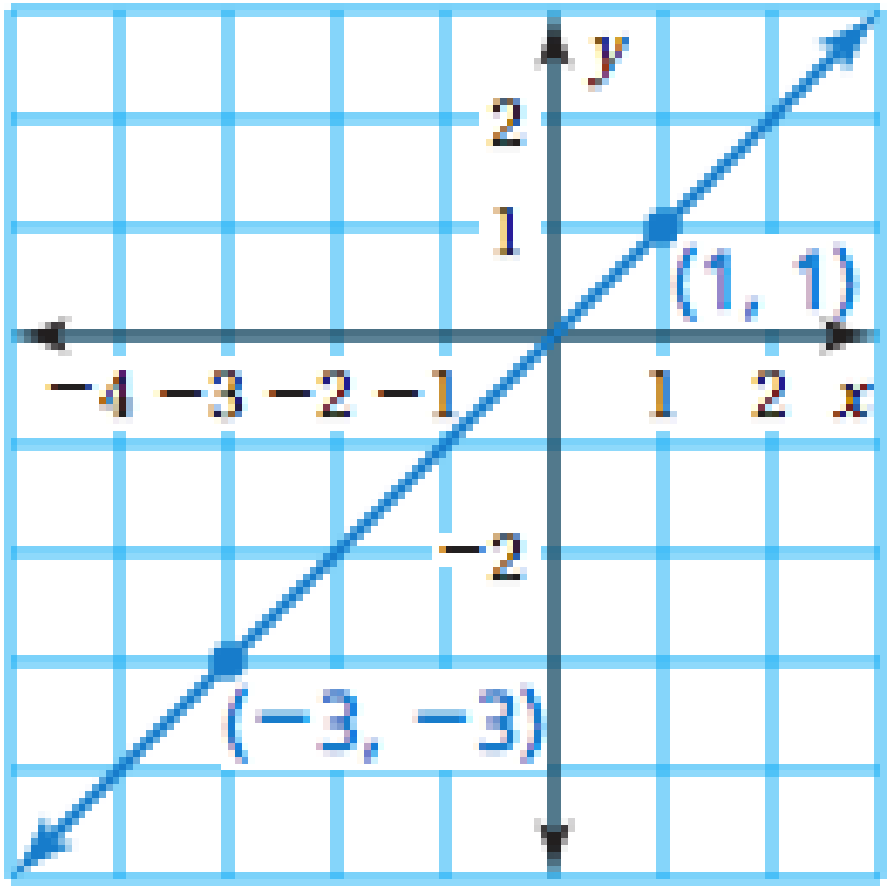


$$slope = \frac{change\ of\ y}{change\ of\ x}$$

5.5 – Slope

Find the slope of the line

$$slope = \frac{change\ of\ y}{change\ of\ x}$$



5.6 – Direct Variation

Equation of Direct Variation	Constant of Proportionality

IDENTIFYING THE GRAPH OF DIRECT VARIATION

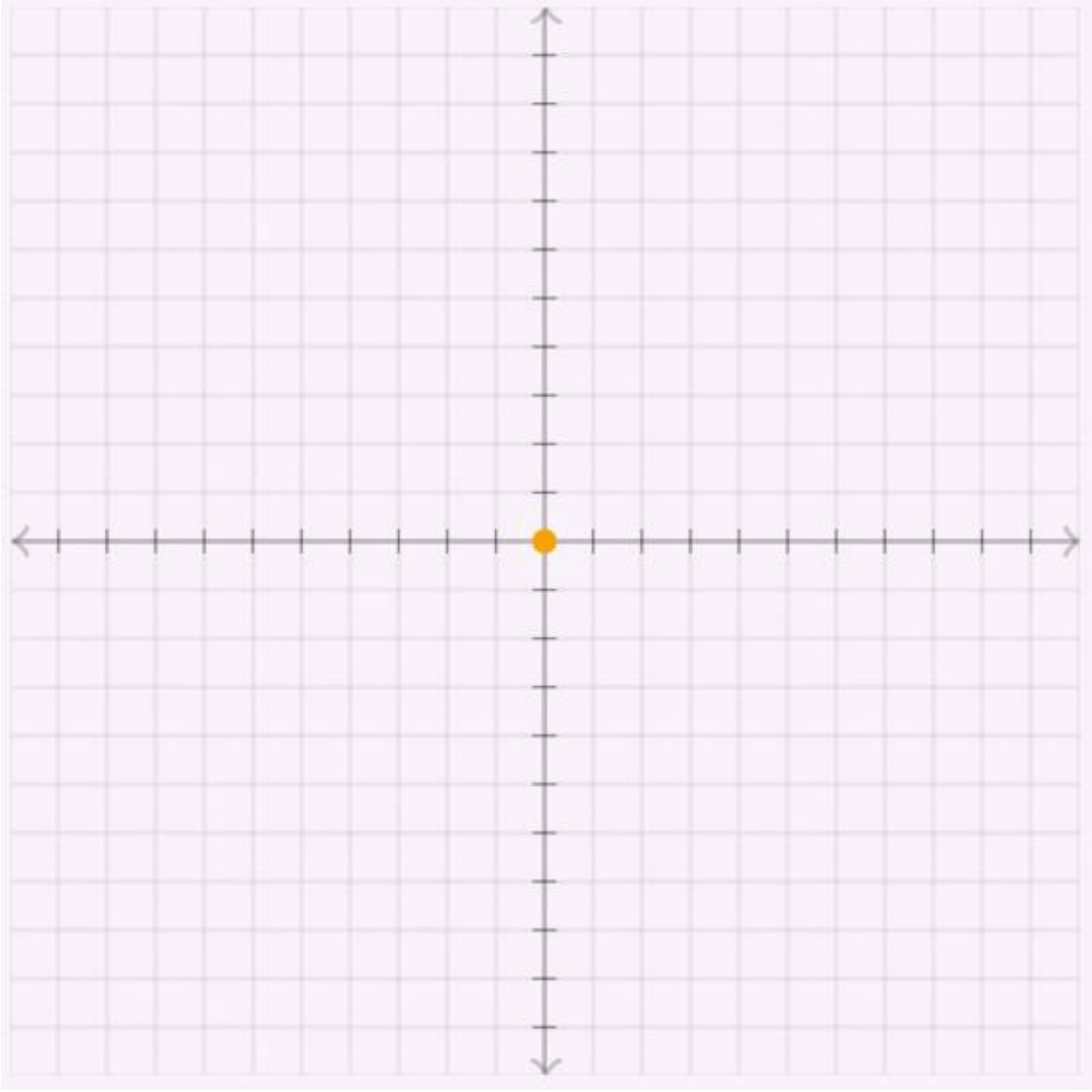
1. **a line**
2. **with a slope of k, $k \neq 0$**
3. **that passes through the origin**

Identifying Direct Variation by Its Graph

9) Tell whether *x* and *y* show direct variation. Explain your reasoning.

x	2	4	6	8
y	10	20	30	40

- Plot the points.
- Draw a line through the points.
- Explain.



Practice

- Can the equation be written as y = kx?
- If yes, then x and y show direct variation.
- If no, then x and y do not show direct variation.

Tell whether *x* and *y* show direct variation. Explain your reasoning.

10) $x + y = 6$

11) $y = x$

12) $x = y + 2$