

Just In Time Quick Check
Standard of Learning (SOL) 7.10b

Strand: Patterns, Functions, and Algebra

Standard of Learning (SOL) 7.10b

The student will graph a line representing a proportional relationship between two quantities given the slope and an ordered pair, or given the equation in $y = mx$ form where m represents the slope as rate of change.

Grade Level Skills:

- Graph a line representing a proportional relationship, between two quantities given an ordered pair on the line and the slope, m , as rate of change. Slope will be limited to positive values.
- Graph a line representing a proportional relationship between two quantities given the equation of the line in the form $y = mx$, where m represents the slope as rate of change. Slope will be limited to positive values.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

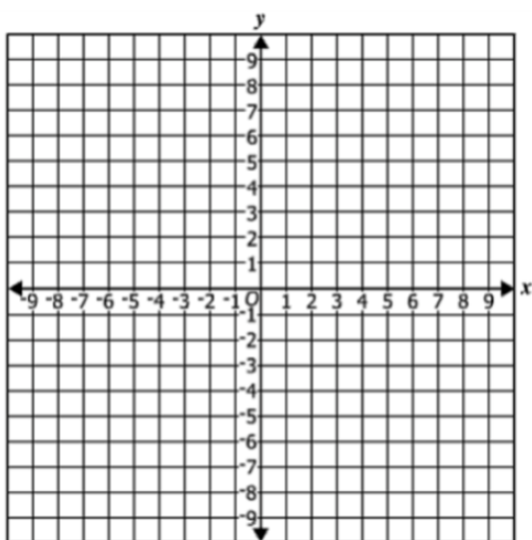
Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [7.10ab - Discover Slope \(\$m\$ \)](#) (Word) / [PDF Version](#)
- VDOE Algebra Readiness Formative Assessments
 - [SOL 7.10b](#) (Word) / [PDF](#)
- VDOE Algebra Readiness Remediation Plans
 - [Slope-Rate of Change in Proportional Relationship](#) (Word) / [PDF](#)
- VDOE Word Wall Cards: Grade 7 ([Word](#)) | ([PDF](#))
 - Slope
 - Graphing Linear Relationships
 - Proportional Relationship: $y=mx$
- Desmos Activity
 - [Slope Investigation Student Activity](#)

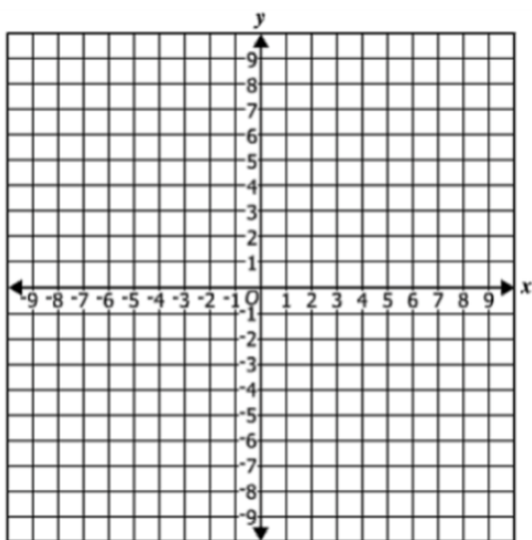
Supporting and Prerequisite SOL: [7.10a](#), [6.1](#), [6.8b](#), [6.12a](#), [6.12b](#), [6.12c](#), [5.18](#)

SOL 7.10b - Just in Time Quick Check

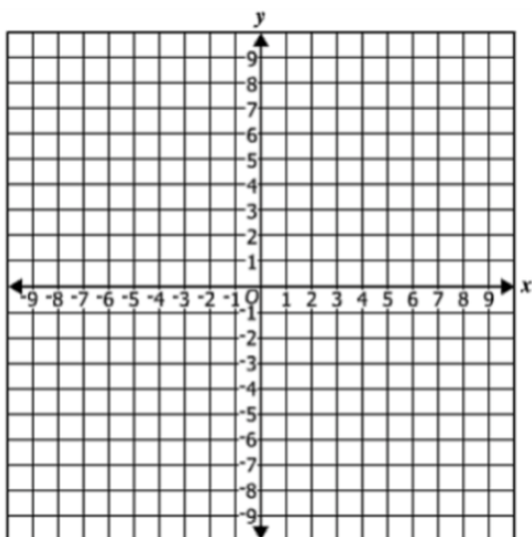
1. Graph the line that passes through $(-6, -4)$ and has a slope of $\frac{2}{3}$. Plot at least two additional points that lie on the line.



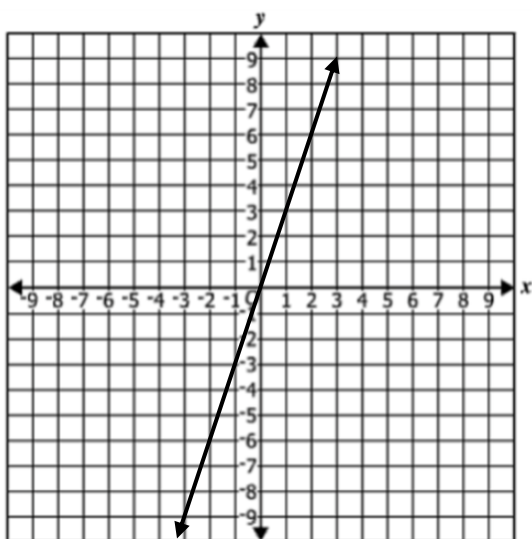
2. Graph the line that represents $y = 2x$. Plot at least 3 points on this line.



3. Graph the line that represents $y = \frac{5}{4}x$. Plot at least 3 points on this line.



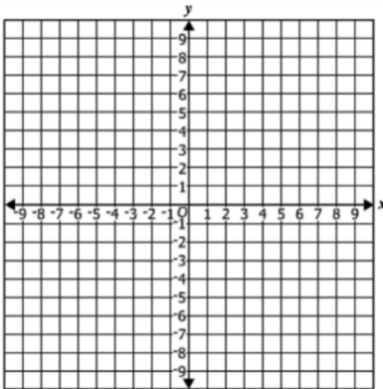
4. Write the equation of the line representing the same relationship shown in the graph.



SOL 7.10b - Just in Time Quick Check Teacher Notes

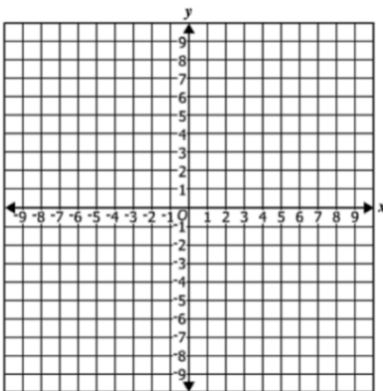
Common Errors/Misconceptions and their Possible Indications

1. Graph the line that passes through $(-6, -4)$ and has a slope of $\frac{2}{3}$. List two points that lie on the line.



A common error a student may make is to plot the reciprocal slope, $m = \frac{3}{2}$. This indicates that there may be confusion with regards to the meaning of slope as the $\frac{\text{change in } y\text{-values}}{\text{change in } x\text{-values}}$. A student may benefit from practice finding slope from two points on a graph or graphing from a table of values. Refer to 6.12c for additional examples of finding the slope between two points. (Math 6 Curriculum Framework)

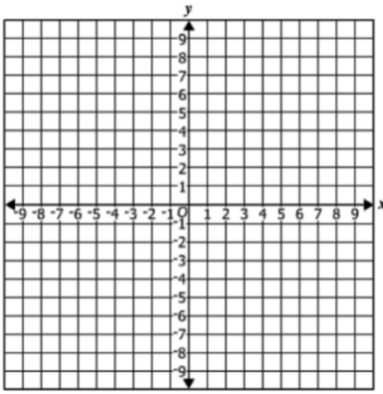
2. Graph the line that represents $y = 2x$. Plot at least 3 points on this line.



A student may incorrectly use the slope value of two as the x- and y-intercept values, plotting $(0, 2)$ and $(2, 0)$. This indicates the student may not understand slope as the $\frac{\text{change in } y\text{-values}}{\text{change in } x\text{-values}}$. The student may benefit from practice deriving slope from the graph of a line in the form of $y = mx$.

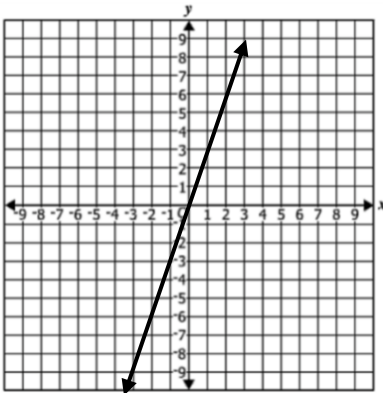
Another common example is students do not include $(0, 0)$ in the graph of the line. This indicates the student does not understand all proportional relationships go through the origin. Students may benefit from a review of the vocabulary associated with proportional relationships, specifically slope and proportional relationship. (see Math 7 Word Wall cards)

3. Graph the line that represents $y = \frac{5}{4}x$. Plot at least 3 points on this line.



A common mistake a student may make is to use the numerator and denominator to plot the point (5, 4). This indicates a student may be thinking slope is a point on a line instead of the $\frac{\text{change in } y\text{-values}}{\text{change in } x\text{-values}}$. A student may benefit from additional practice writing and graphing equations in the form $y = mx$ using the Desmos Activity: 7.10ab – Slope Investigation Student Activity.

4. Write the equation of the line representing the same relationship shown in the graph.



A student may incorrectly represent the line with the equation $y = \frac{1}{3}x$. This indicates that the student has identified the slope of the line as change in x – values over change in y – values. The student may benefit from more practice finding the slope from two points on a graph. Refer to 7.10a Quick Check or VDOE Algebra Readiness Formative Assessments: SOL 7.10a for additional practice determining the slope of two points.