

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

Strand: Patterns, Functions, and Algebra

Standard of Learning (SOL) 7.10d

The student will graph a line representing an additive relationship between two quantities given the y-intercept and an ordered pair, or given the equation in the form $y = x + b$, where b represents the y-intercept.

Grade Level Skills:

- Graph a line representing an additive relationship ($y = x + b$, $b \neq 0$) between two quantities, given an ordered pair on the line and the y-intercept (b). The y-intercept (b) is limited to integer values and slope is limited to 1.
- Graph a line representing an additive relationship between two quantities, given the equation in the form $y = x + b$, $b \neq 0$. The y-intercept (b) is limited to integer values and slope is limited to 1.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

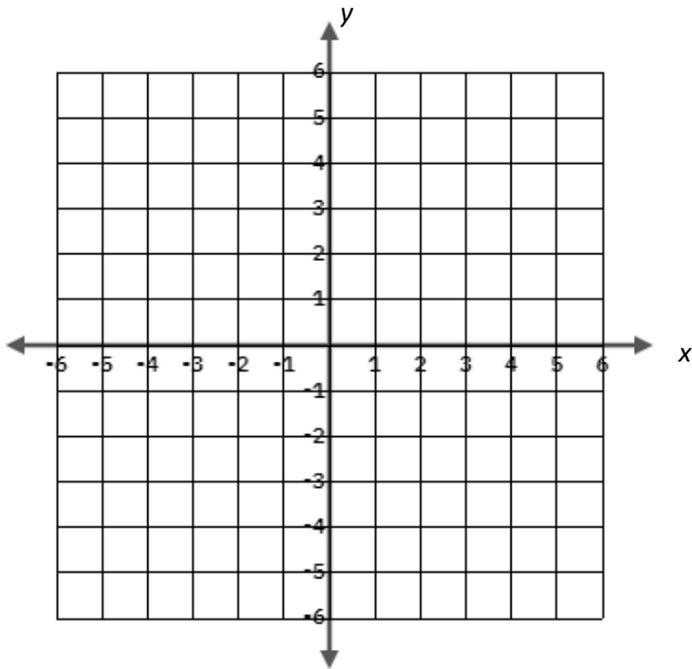
Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [7.10cd - Discover y-intercept \(b\)](#) (Word) / [PDF Version](#)
- VDOE Algebra Readiness Formative Assessments
 - [SOL 7.10d](#) (Word) / [PDF](#)
- VDOE Algebra Readiness Remediation Plans
 - [Y-Intercept and Additive Relationships](#) (Word) / [PDF](#)
- VDOE Word Wall Cards: Grade 7 ([Word](#)) | ([PDF](#))
 - Additive Relationship: $y = x + b$
 - Additive Relationship
 - Graphing Linear Relationships
- Desmos Activity
 - [SOL 7.10cd Y-Intercept Investigation](#)

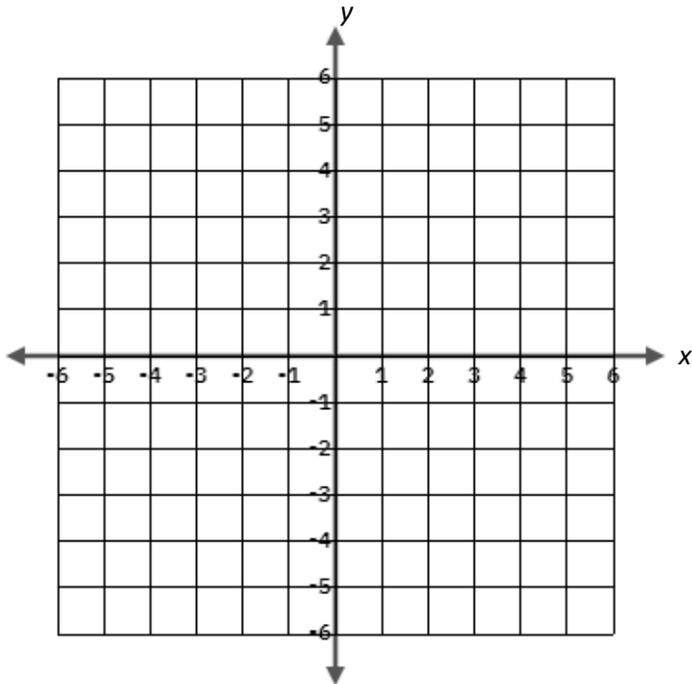
Supporting and Prerequisite SOL: [7.10c](#), [6.8b](#), [5.18](#)

SOL 7.10d - Just in Time Quick Check

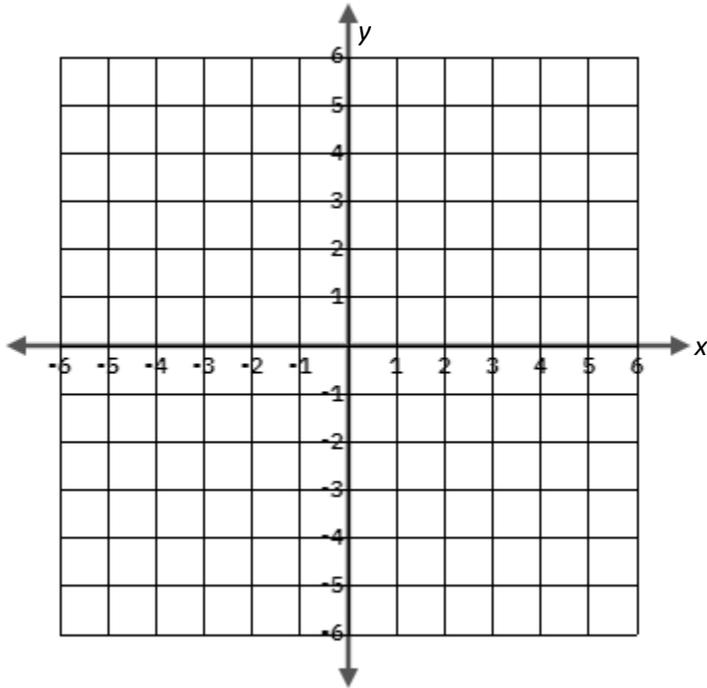
1. Graph the line that passes through $(-2, 3)$ and has a y -intercept of 5. Graph at least two additional points that lie on this line.



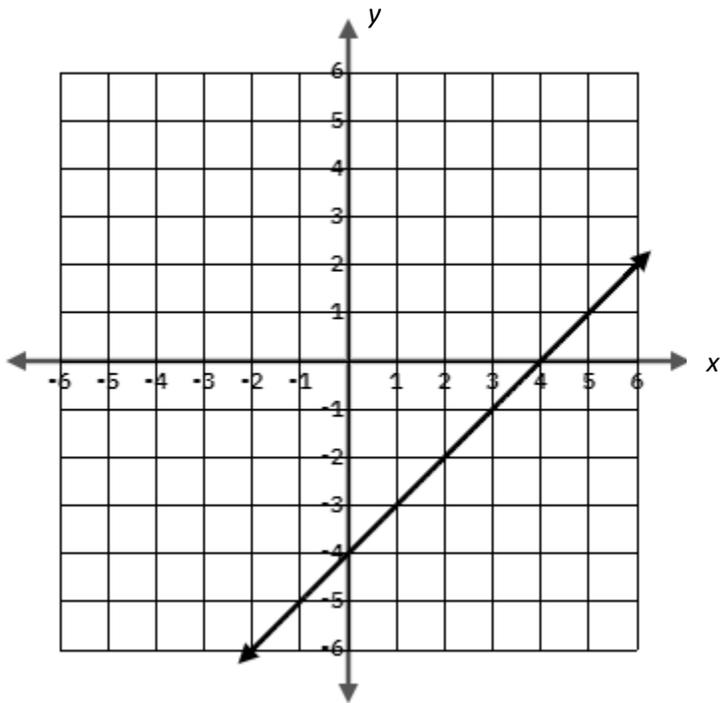
2. Plot two points that lie on the line represented by this equation, $y = x - 2$.



3. Graph the line that passes through $(-3, -6)$ and has a y -intercept of -3 . Plot two points that lie on this line.



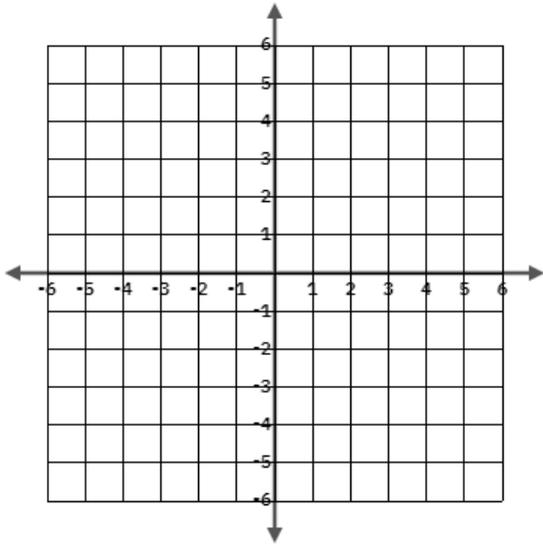
4. Write the equation of the line representing the relationship shown in the graph.



SOL 7.10d - Just in Time Quick Check Teacher Notes

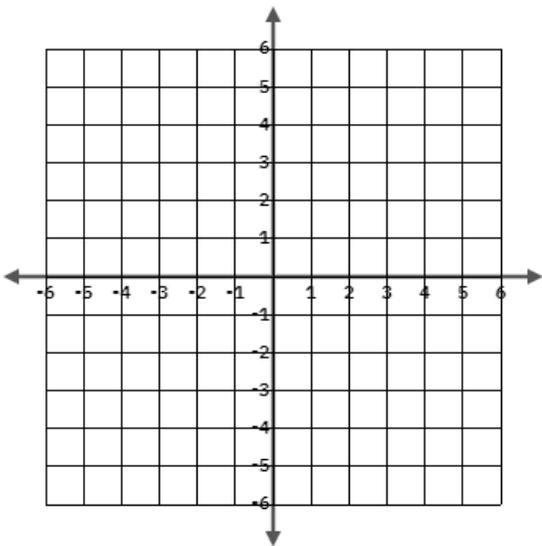
Common Errors/Misconceptions and their Possible Indications

1. Graph the line that passes through $(-2, 3)$ and has a y -intercept of 5. . Graph at least two additional that lie on this line.



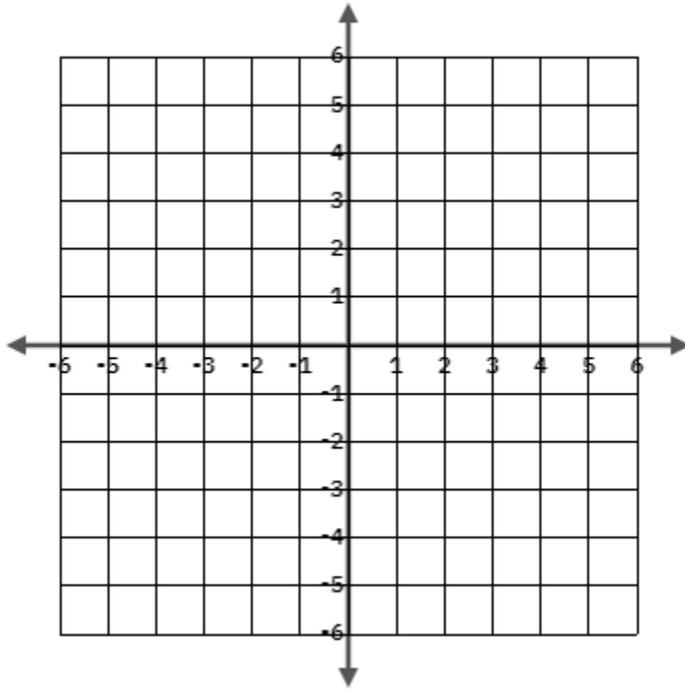
A common mistake is to use the y -intercept value to plot both the x -intercept and y -intercept. This error indicates the student does not understand what the y -intercept or b in the equation represents. A student may need additional practice with additive relationships as well as identifying the y -intercept from a graph and from an equation separately to build understanding. One resource is the VDOE MIP: 7.10cd - Discover y -intercept (b).

2. Plot two points that lie on the line represented by this equation, $y = x - 2$.



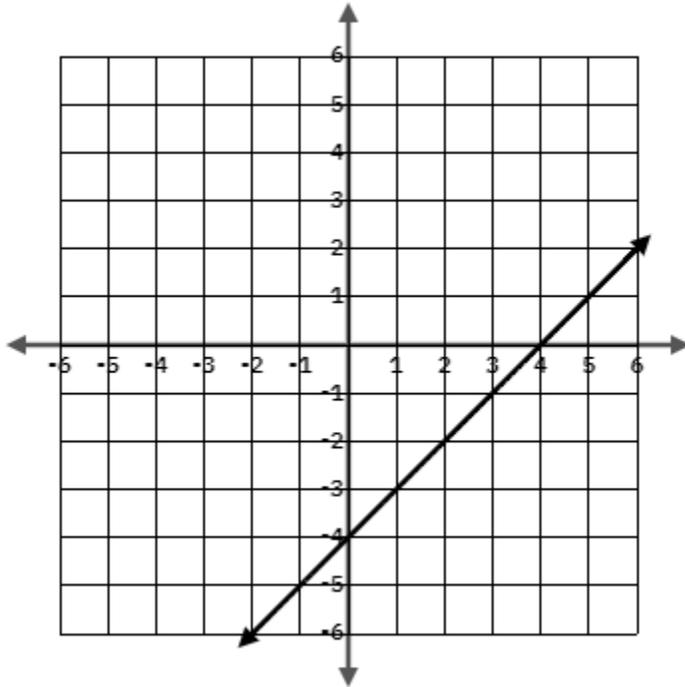
A common error that a student may make is to graph the line $y = x + 2$. This may indicate that a student is plotting an x -intercept of -2 instead of a y -intercept of -2 . A student may benefit from additional practice graphing lines with negative y -intercepts. Another common error is to graph $y = 2x$. This may indicate the student is having trouble differentiating between additive and multiplicative relationships. Reference the VDOE Algebra Readiness lesson, Y -Intercept and Additive Relationships, and formative assessment items, SOL 7.10d for additional examples and practice.

3. Graph the line that passes through $(-3, -6)$ and has a y -intercept of -3 . Plot two points that lie on this line.



A common error a student may make is to graph $(-6, -3)$ and/or plot an x -intercept of -3 . Each of these errors may indicate confusion graphing ordered pairs and differentiating between the x - and y -axis. A student may benefit from additional practice plotting points (reference VDOE MIP [6.8ab - What's the Point?](#)).

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



A common error a student may make is to use the y-intercept as the slope and write the equation $y = -4x$. This indicates that the student may not understand the difference between $y = mx$ and $y = x + b$. A student may benefit from additional practice writing equations from additive graphs and verifying with ordered pairs or intercepts (reference the Desmos activity [SOL 7.10cd Y-Intercept Investigation](#)). Additional practice could also include creating a table with points from the graph and use the table to write the equation of the graph.