

**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**

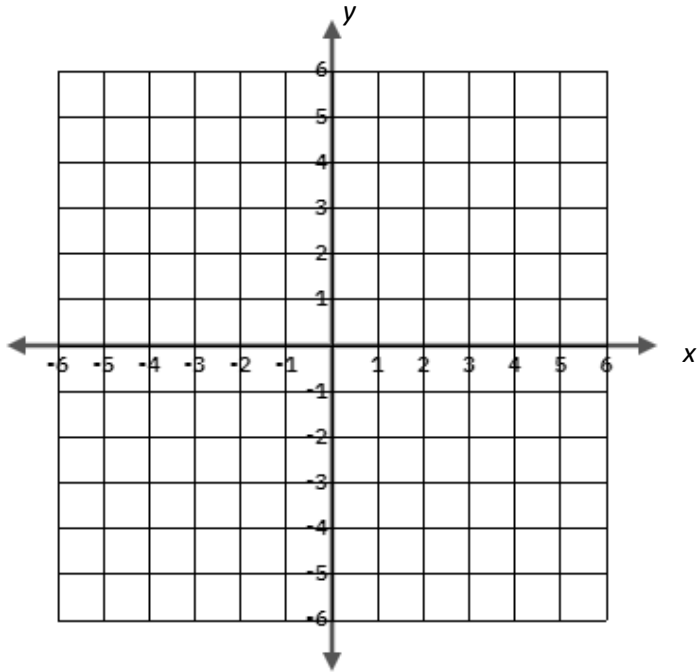
**Supporting Resources:**

- 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](#)

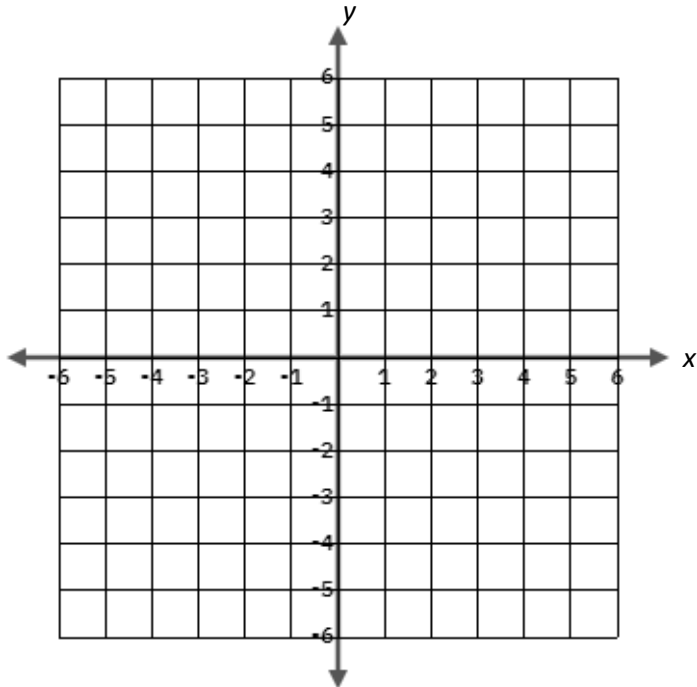
Supporting and Prerequisite SOL: [7.10c](#), [6.8b](#), [5.18](#)

### SOL 7.10d - Just in Time Quick Check

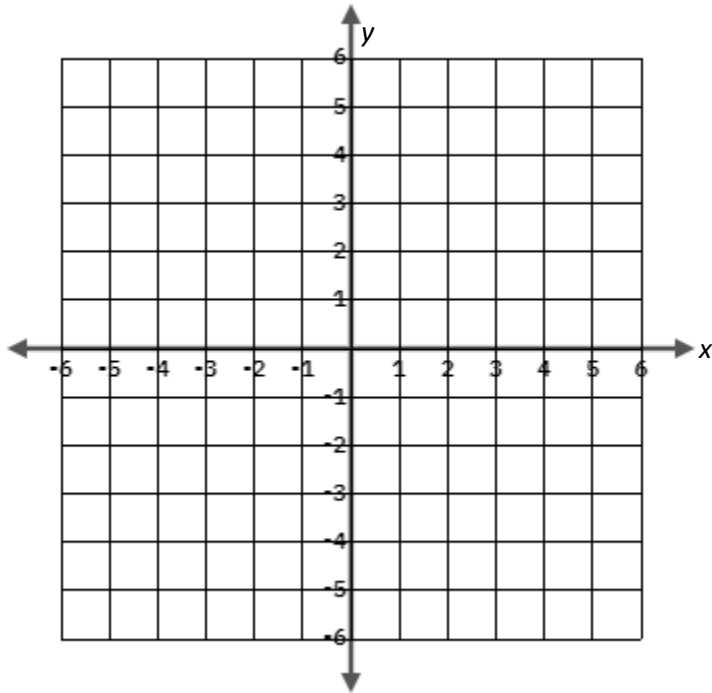
1. Graph the line that passes through  $(-2, 3)$  and has a  $y$ -intercept of 5. Graph at least two additional points that lie on this line.



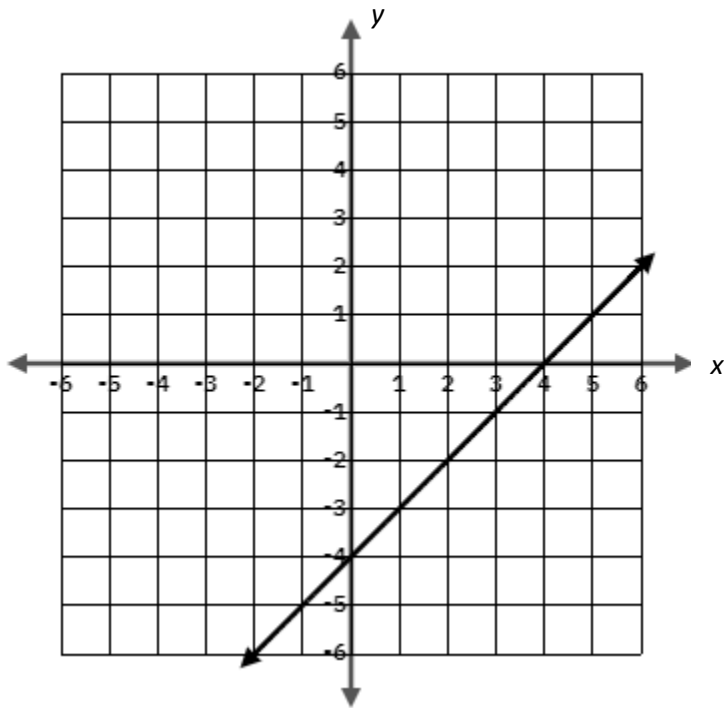
2. Plot two points that lie on the line represented by this equation,  $y = x - 2$ .



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



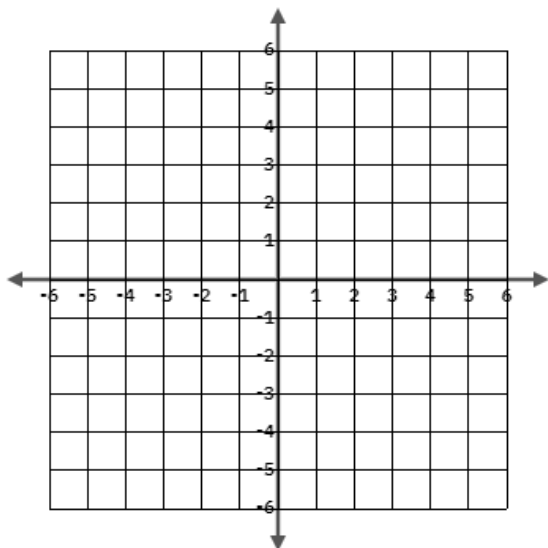
4. Write the equation of the line representing the relationship shown in the graph.



## SOL 7.10d - Just in Time Quick Check Teacher Notes

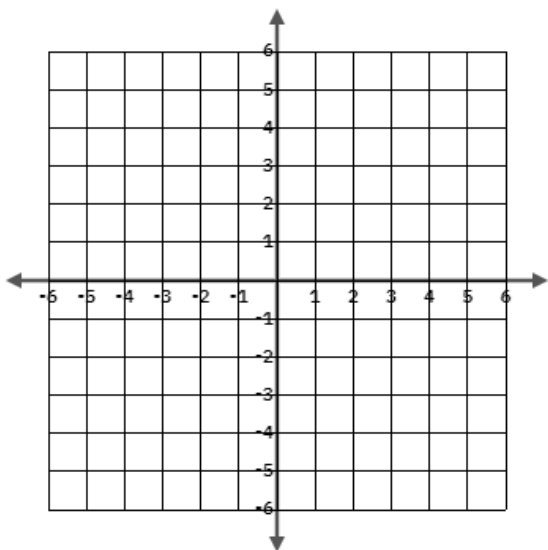
### Common Errors/Misconceptions and their Possible Indications

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.



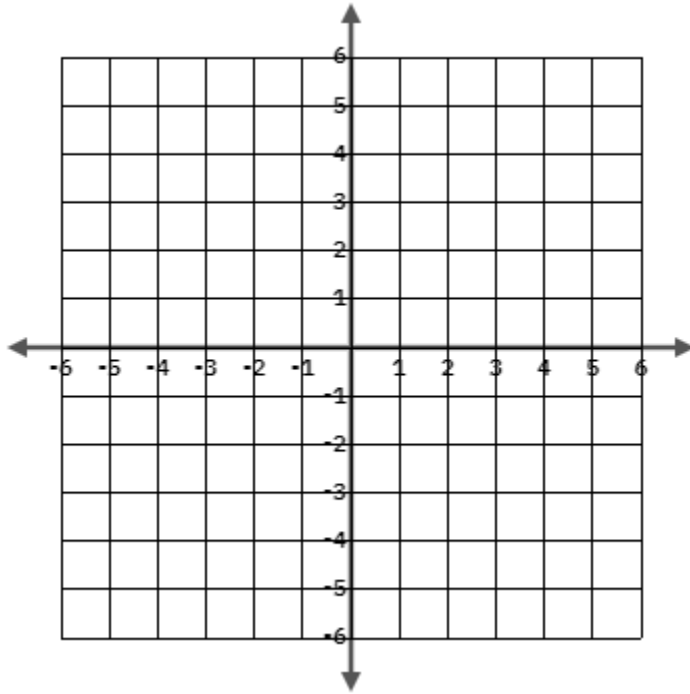
*A common mistake is to use the  $y$ -intercept value to plot both the  $x$ -intercept and  $y$ -intercept. This error indicates the student does not understand what the  $y$ -intercept or  $b$  in the equation represents. A student may need additional practice with additive relationships as well as 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,  $y = x - 2$ .



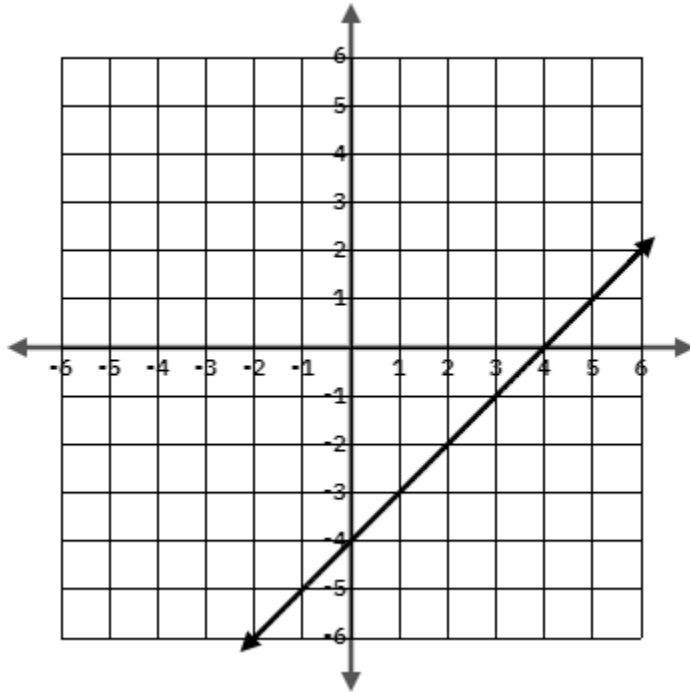
*A common error that a student may make is to graph the line  $y = x + 2$ . This may indicate that a student is plotting an  $x$ -intercept of  $-2$  instead of a  $y$ -intercept of  $-2$ . A student may benefit from additional practice graphing lines with negative  $y$ -intercepts. Another common error 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.*