Just In Time Quick Check

[**Standard of Learning (SOL) 7.10d**](https://www.doe.virginia.gov/home/showpublisheddocument/3108/637982466066300000)

| Strand:Patterns, Functions, and Algebra |
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| 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 ≠ 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 ≠ 0. The y-intercept (b) is limited to integer values and slope is limited to 1.
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| [**Just in Time Quick Check**](#bookmark=id.gjdgxs) |
| [**Just in Time Quick Check Teacher Notes**](#teacher) |
| Supporting Resources: * VDOE Mathematics Instructional Plans (MIPS)
	+ [7.10cd - Discover y-intercept (b)](https://www.doe.virginia.gov/home/showpublisheddocument/17410/638037682927700000) (Word) / [PDF Version](https://www.doe.virginia.gov/home/showpublisheddocument/17412/638037682936770000)
* VDOE Algebra Readiness Formative Assessments
	+ [SOL 7.10d](https://www.doe.virginia.gov/home/showpublisheddocument/31062/638046558967600000) (Word) / [PDF](https://www.doe.virginia.gov/home/showpublisheddocument/31064/638046558972300000)
* VDOE Algebra Readiness Remediation Plans
	+ [Y-Intercept and Additive Relationships](https://www.doe.virginia.gov/home/showpublisheddocument/30664/638046510020670000) (Word) / [PDF](https://www.doe.virginia.gov/home/showpublisheddocument/30666/638046510027200000)
* VDOE Word Wall Cards: Grade 7 [(Word)](https://www.doe.virginia.gov/home/showpublisheddocument/18662/638041054343600000) | [(PDF)](https://www.doe.virginia.gov/home/showpublisheddocument/18664/638041054352070000)
	+ Additive Relationship: *y = x + b*
	+ Additive Relationship
	+ Graphing Linear Relationships
* Desmos Activity
	+ [SOL 7.10cd Y-Intercept Investigation](https://teacher.desmos.com/activitybuilder/custom/58cbf8a84d97550612faa32e)
 |
| Supporting and Prerequisite SOL**:** [7.10c](https://www.doe.virginia.gov/home/showpublisheddocument/25180/638045413961200000), [6.8b](https://www.doe.virginia.gov/home/showpublisheddocument/25076/638045394337100000), [5.18](https://www.doe.virginia.gov/home/showpublisheddocument/24970/638045383426970000) |

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.

*y*



*x*

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

*y*



*x*

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

*y*



*x*

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

*y*



*x*

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).*

1. 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 assessement items, SOL 7.10d for additional examples and practice.*

1. 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?*](http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/2016/mip/gr6/mip-6-8ab-what-point.docx)*).*

1. 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.*