

Just In Time Quick Check
Standard of Learning (SOL) 8.15a

Strand: Patterns, Functions, and Algebra

Standard of Learning (SOL) 8.15a

The student will determine whether a given relation is a function.

Grade Level Skills:

- Determine whether a relation, represented by a set of ordered pairs, a table, or a graph of discrete points is a function. Sets are limited to no more than 10 ordered pairs.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [8.15 - Relations and Functions; Domain and Range](#) (Word) / [PDF Version](#)
- VDOE Algebra Readiness Formative Assessments
 - [SOL 8.15a,b](#) (Word) / [PDF](#)
- VDOE Algebra Readiness Remediation Plans
 - [Relations, Functions, Tables and Graphs](#) (Word) / [PDF](#)
- VDOE Word Wall Cards: Grade 8 ([Word](#)) | ([PDF](#))
 - Relations
 - Functions
- Desmos Activity
 - [Polygraph: 8.15a Functions and Relations \(Discrete Points\)](#)
 - [8.15a Function or Not?](#)

Supporting and Prerequisite SOL: [8.13a](#), [6.8b](#)

SOL 8.15a - Just in Time Quick Check

- 1.) Does the relation presented in the table represent a function? Explain your reasoning.

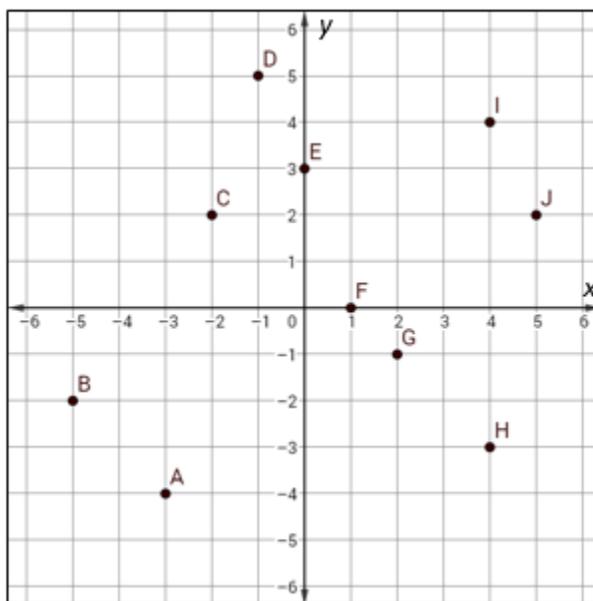
x	y
-2	3
-1	3
0	3
1	3
2	3

- 2.) Does the relation presented in the set of ordered pairs represent a function? Explain your reasoning.

$$\{(-3, 5), (-1, 2), (0, 0), (-1, 6), (-2, 4)\}$$

- 3.) The ordered pairs shown on the coordinate plan represent a relation.

- Name one point that you could relocate to make the relation a function.
- Write the new coordinates of the point that you relocated to make the relation a function.
- Explain your reasoning.



SOL 8.15a - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

- 1.) Does the relation presented in the table represent a function? Explain your reasoning.

x	y
-2	3
-1	3
0	3
1	3
2	3

A common error is for students to say that this relation does not represent a function because of the repeating y -value of 3. This indicates that a student believes that if any y -value repeats then the relation is not a function. These students could benefit from graphing the ordered pairs so they can see the relation represented visually to see that the points are not aligned vertically. These students could also benefit from experimenting with a function machine whose rule is $y = 0x + 3$. Each input, or x -value, has a unique output, or y -value. All of the output values are the same, 3.

- 2.) Does the relation presented in the set of ordered pairs represent a function? Explain your reasoning.

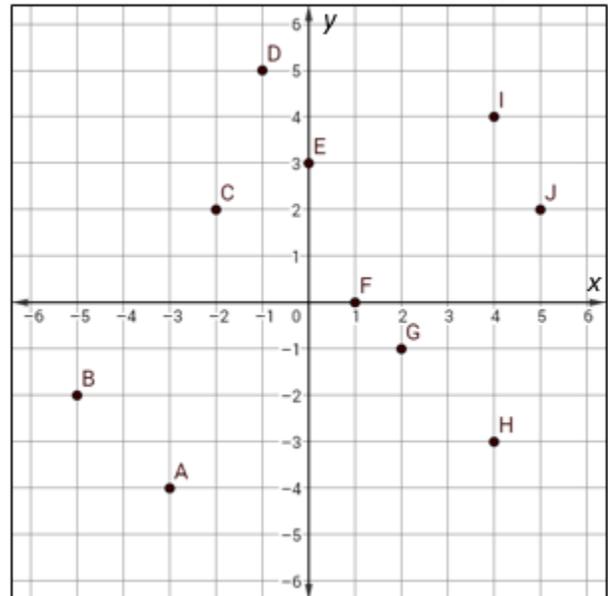
$\{(-3, 5), (-1, 2), (0, 0), (-1, 6), (-2, 4)\}$

A common error students may make is declaring this relation represents a function without a reason. This indicates the student does not have an understanding of the definition of a function. These students could benefit from revisiting the VDOE Word Wall Cards: Math 8 and the definition of a function. They should practice explaining their reasoning, regarding whether a given relation represents a function, in terms of this definition. Refer to the Mathematics Instructional Plan on Relations and Functions; Domain and Range for examples.

Another common error that students make is declaring that this relation represents a function because they do not see a repeating x -value. Since the x -value of -1 does relate to two different y -values, this indicates that the student understands the definition of a function but does not understand where x and y coordinates are represented in an ordered pair. These students could benefit from a reviewing how to write ordered pairs. Refer to the Coordinate Plane card in the VDOE Word Wall Cards: Math 6.

3.) The relation pictured on the coordinate plane does not represent a function.

- Name one point that you could relocate to make the relation a function.
- List the new ordered pair for the relocated the point.
- Explain your reasoning.



A common error is for students to name either the point C or J as the point that should be relocated because they lie on the same horizontal line. This indicates that a student is confusing the vertical line test with a horizontal line test. These students may benefit from representing the ordered pairs in a table to see that points C and J each have x-values that are related to exactly one y-value.