Module 11: Direct and Inverse Variation
Topic 2 Content: Graphing Direct Variation Equations Notes

Introduction

Hi there! I'm so glad you could join me for this lesson in Algebra I, where you will learn how to represent a direct variation graphically.

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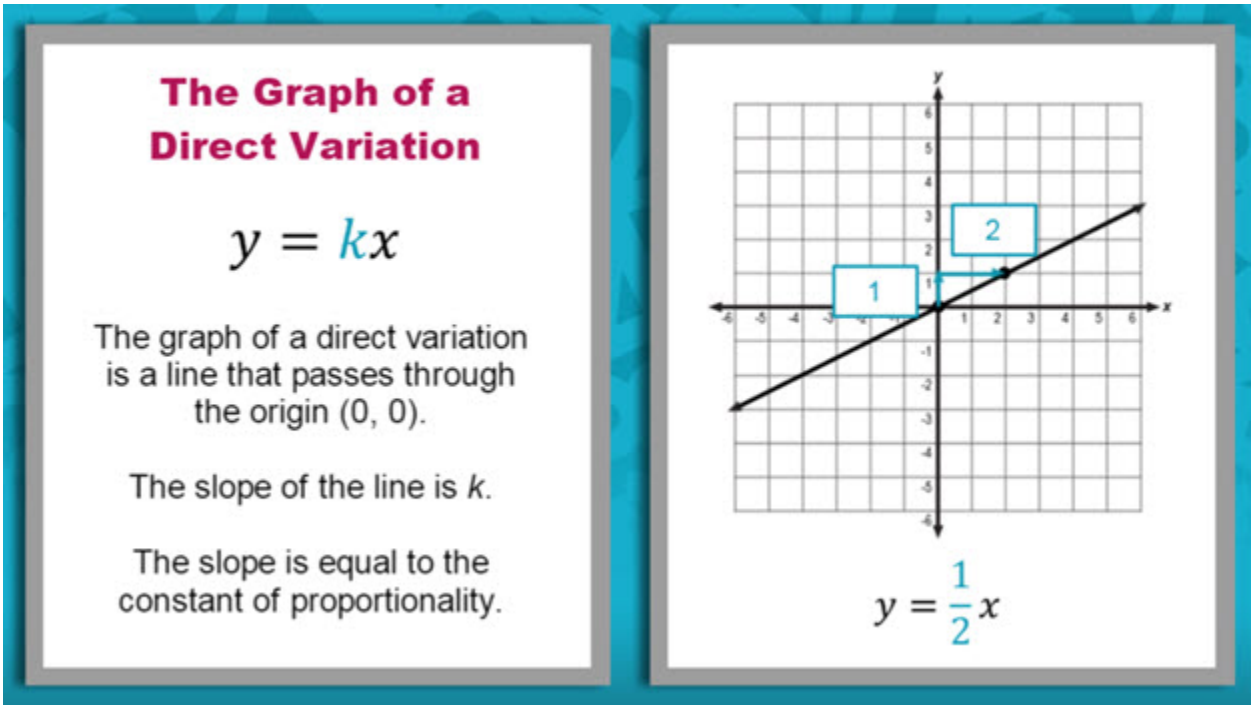
Anticipatory Set



The Graph of a Direct Variation

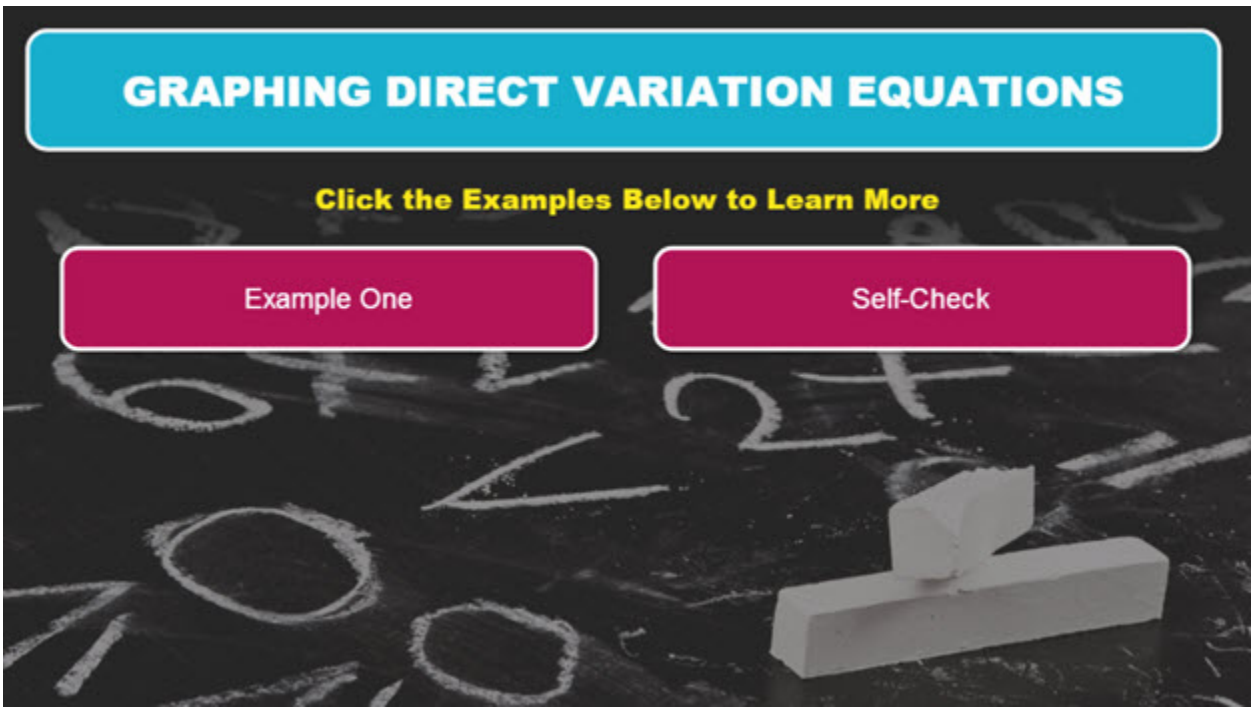
$$y = kx$$

The graph of a direct variation is a line that passes through the origin. The slope of the line is k, the constant of proportionality.

Consider the graph of the direct variation equation, $y = \frac{1}{2}x$.

Notice that the line passes through the origin. The value $\frac{1}{2}$ is the slope of the line, as well as the constant of proportionality in the direct variation equation.

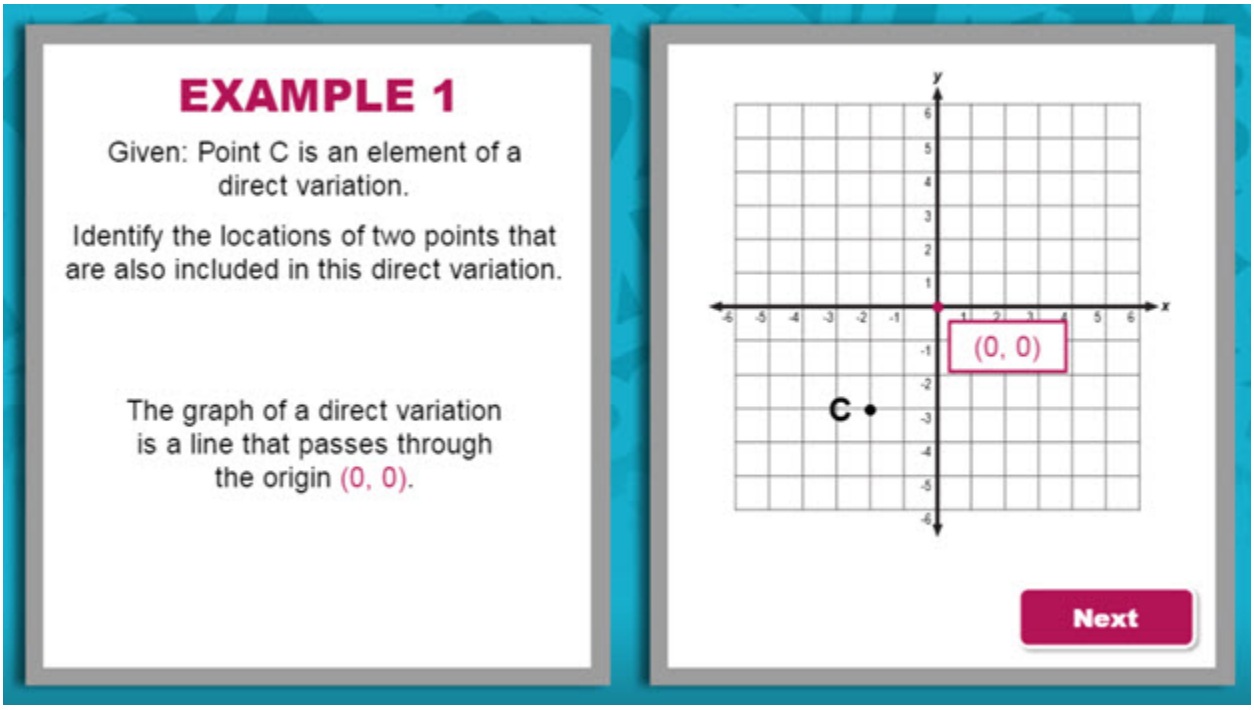
Graphing Direct Variation Equations



Click the examples below to learn more.

- Example One
- Self-Check

Example One

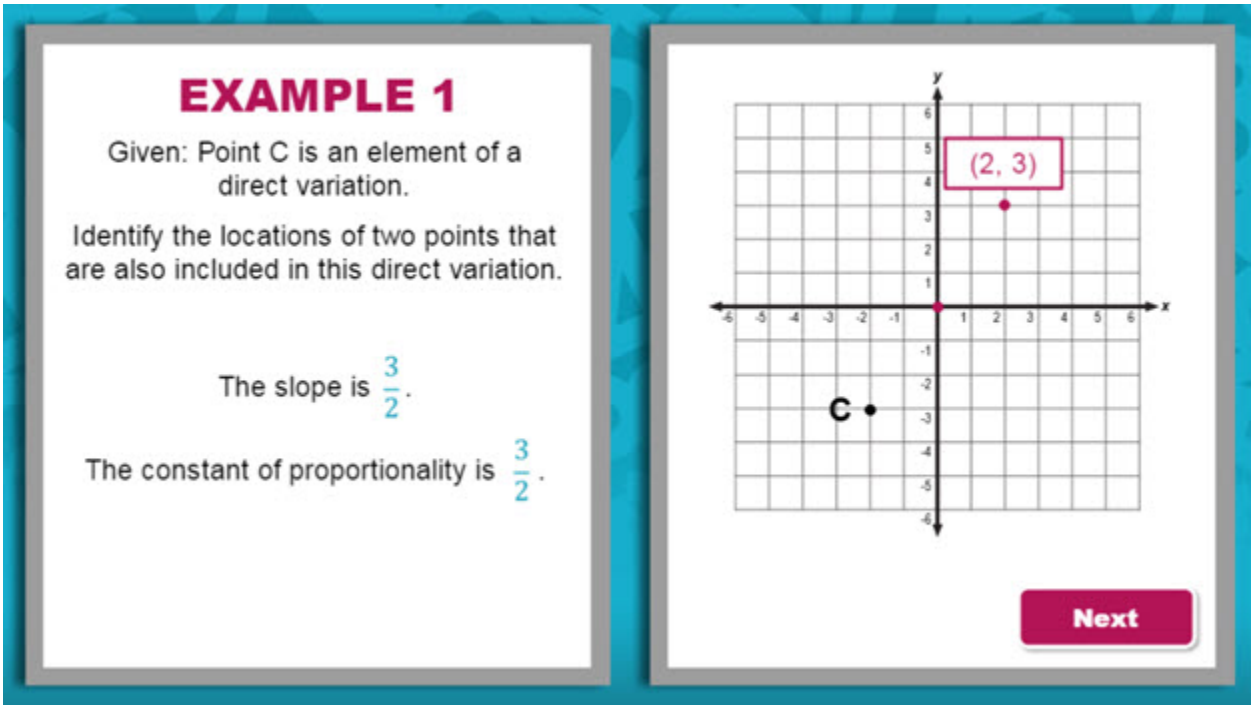


Given: Point C is an element of a direct variation.

Identify the locations of two points that are also included in this direct variation.

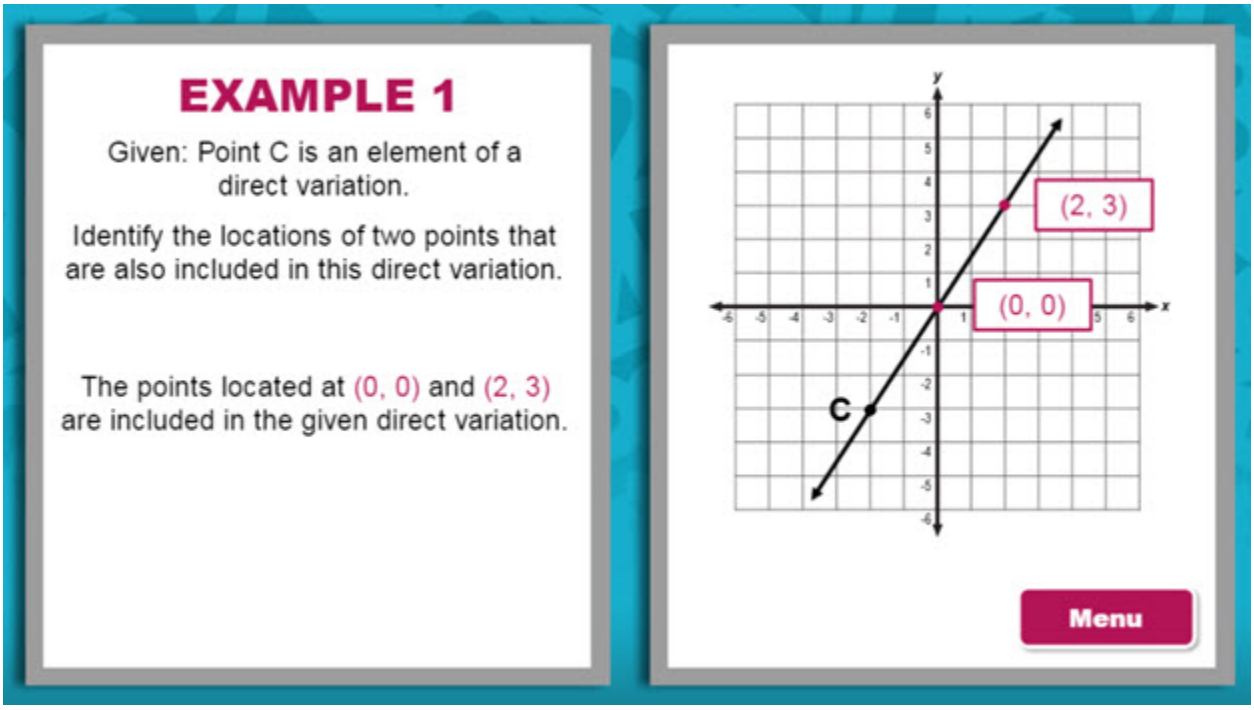
The graph of a direct variation is a line that passes through the origin. Therefore, $(0, 0)$ is the location of one point that is included in the given direct variation.

Example One (continued)



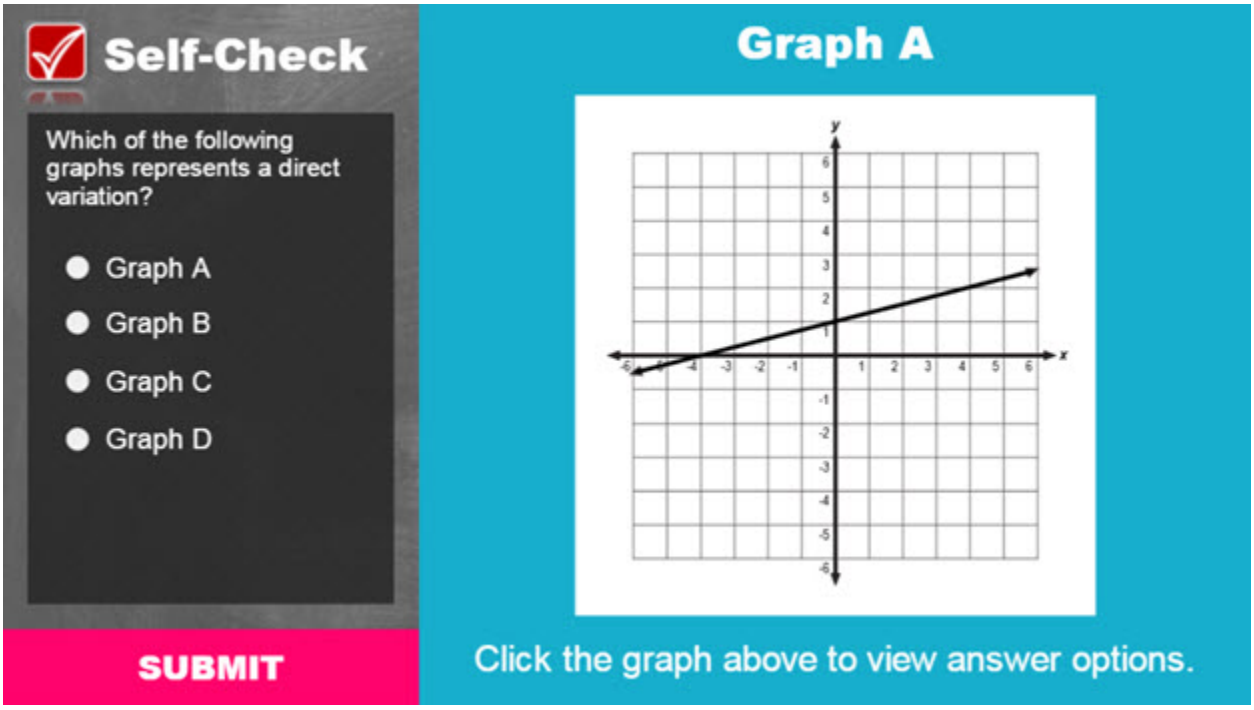
Now, you can determine the constant of proportionality to help you identify a second point. The slope between Point C and the origin is $\frac{3}{2}$. Therefore, the constant of proportionality is $\frac{3}{2}$. Beginning at the origin, move 3 units up and 2 units right. The point where you end is included in the direct variation. This point is located at (2, 3).

Example One (continued)



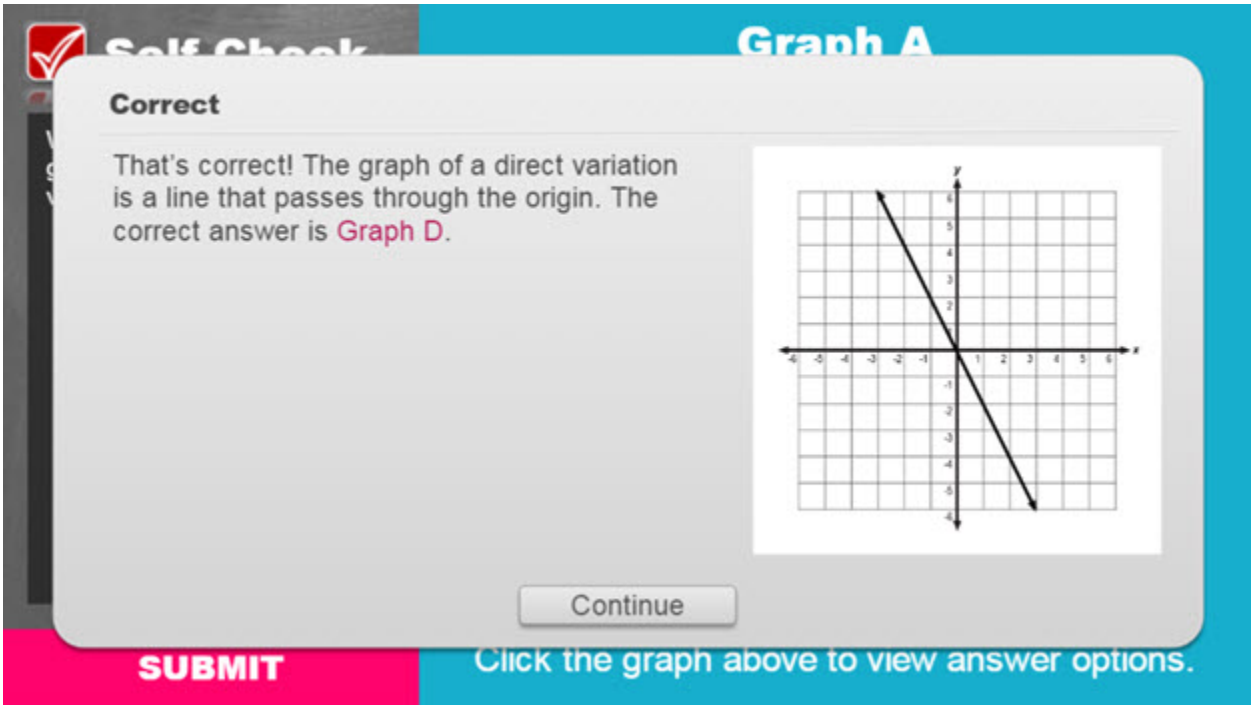
Your work is complete. The points located at $(0, 0)$ and $(2, 3)$ are included in the given direct variation.

Self-Check 1



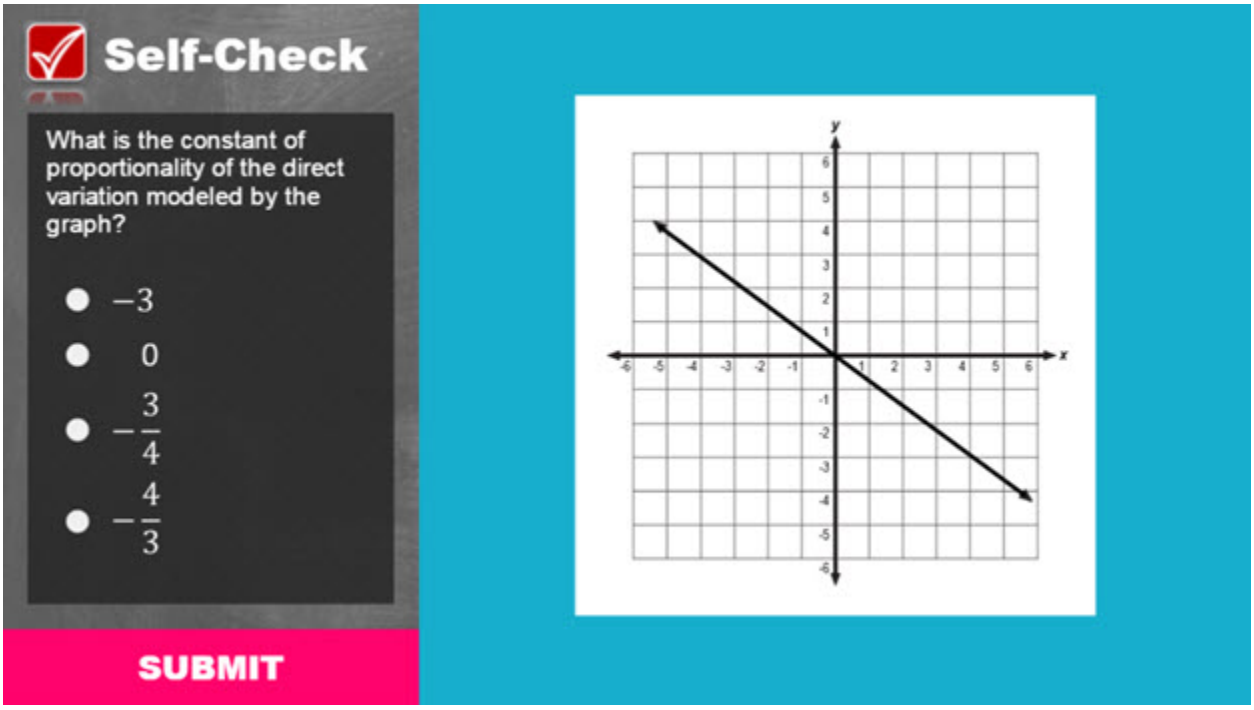
Solve the problem in the image above to check your understanding of the content.

Self-Check 1: Answer



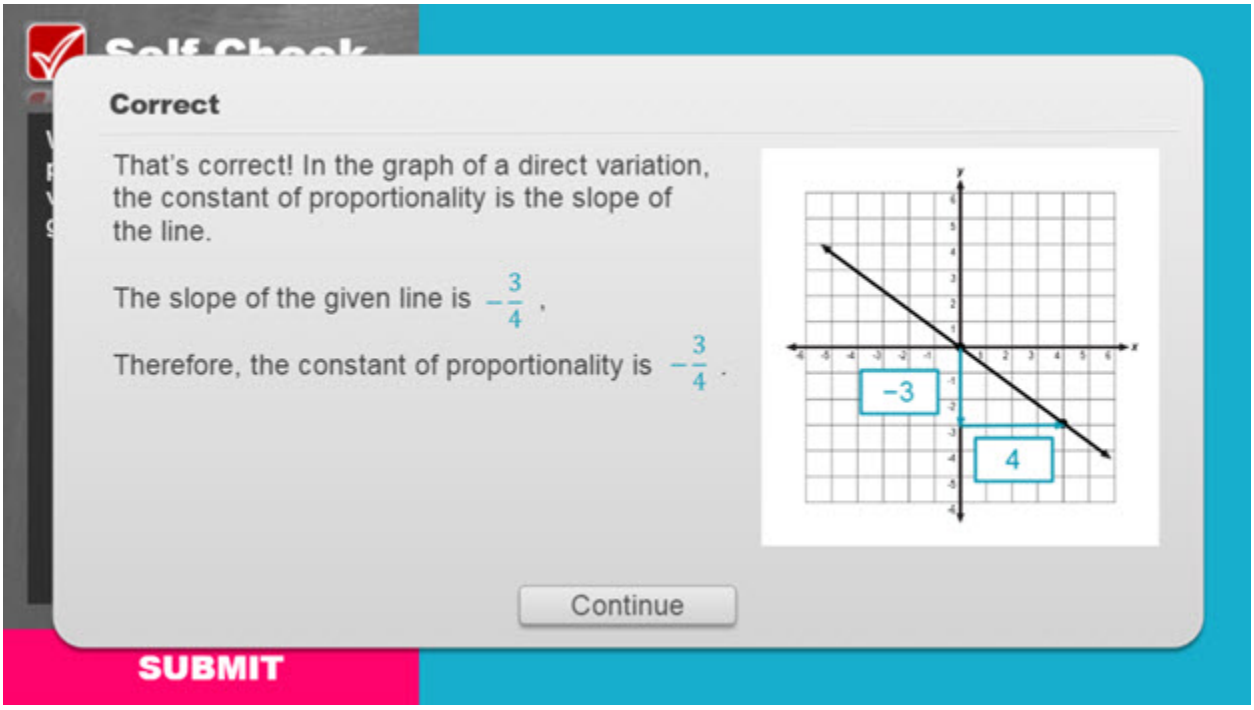
For your reference, the image above shows the correct solution to the self-check problem.

Self-Check 2



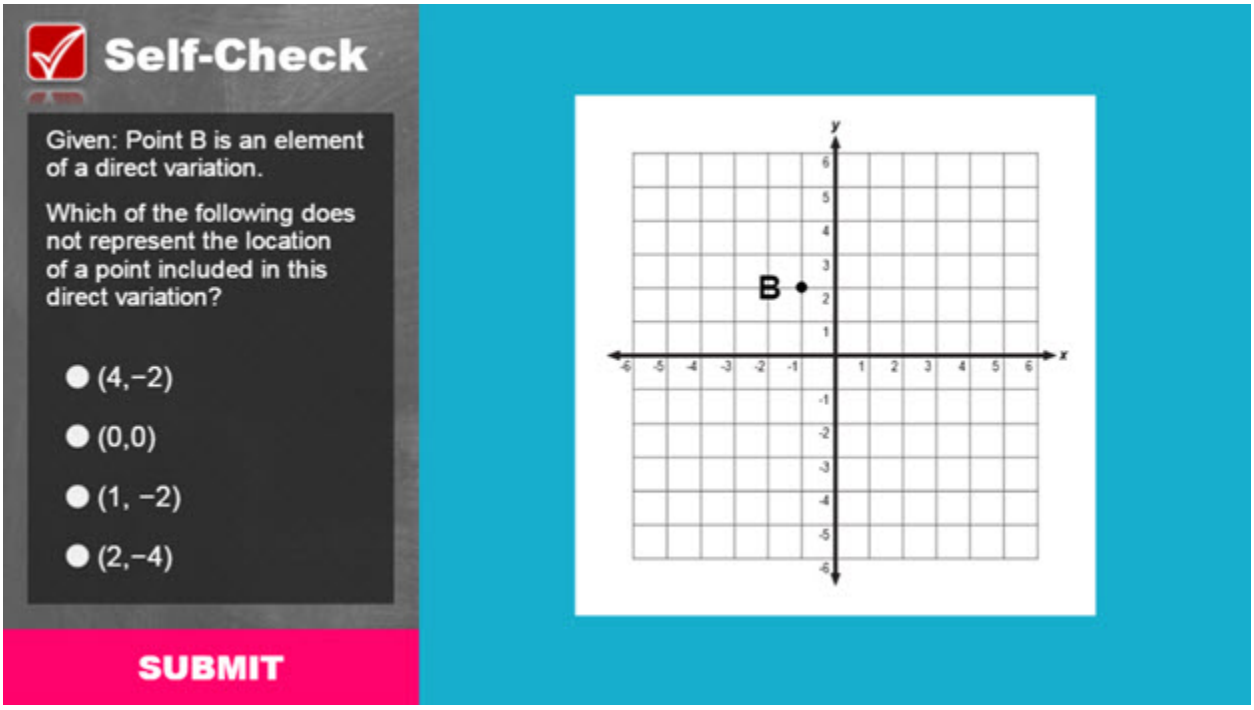
Solve the problem in the image above to check your understanding of the content.

Self-Check 2: Answer



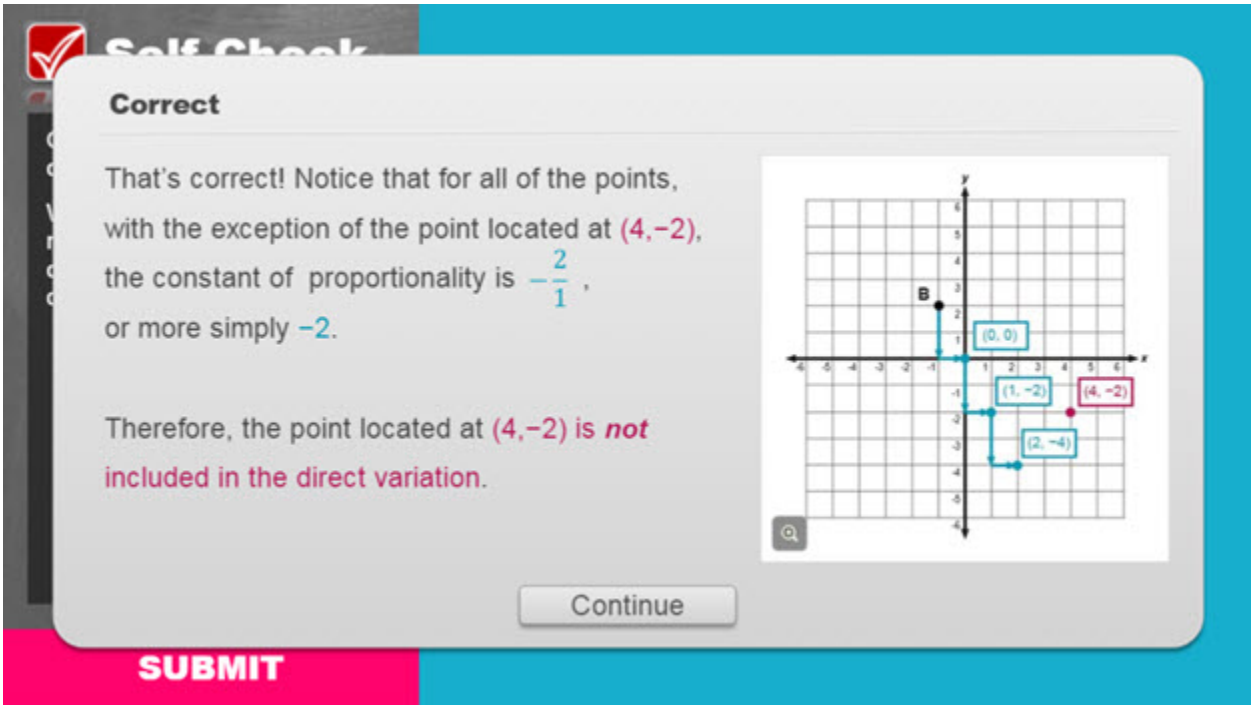
For your reference, the image above shows the correct solution to the self-check problem.

Self-Check 3



Solve the problem in the image above to check your understanding of the content.

Self-Check 3: Answer



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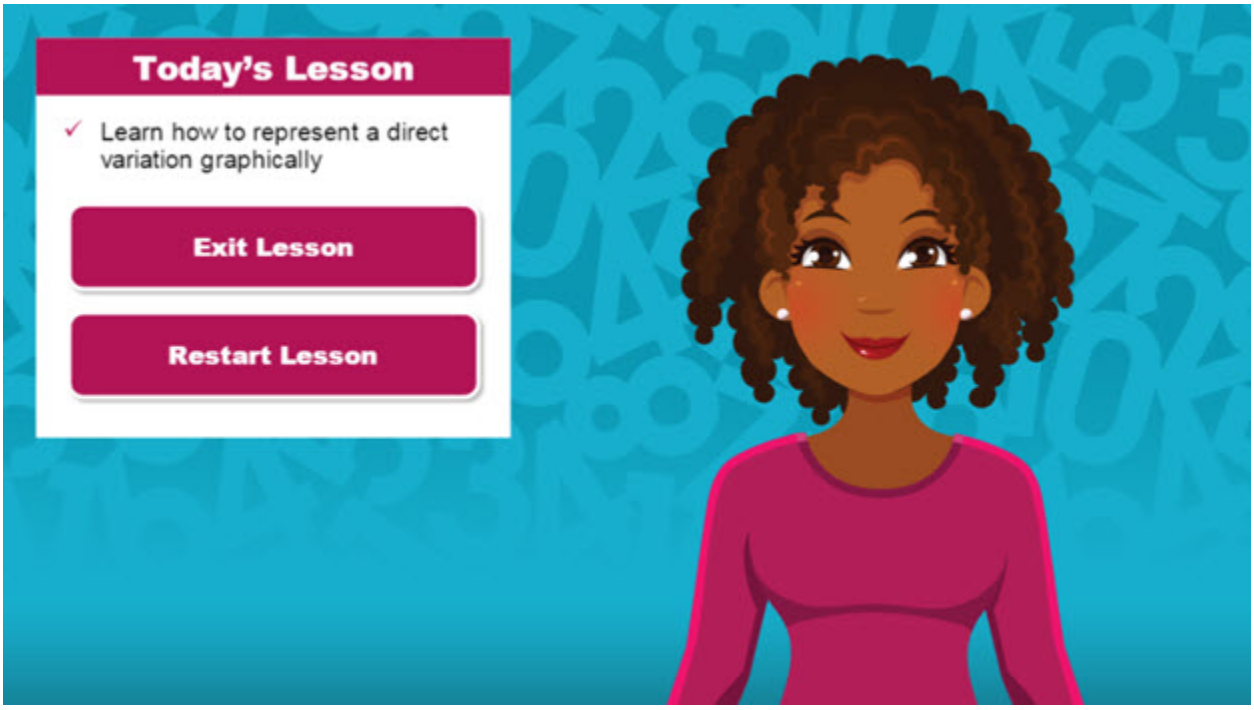
Conclusion



You have reached the conclusion of this lesson, where you learned how to represent a direct variation graphically.