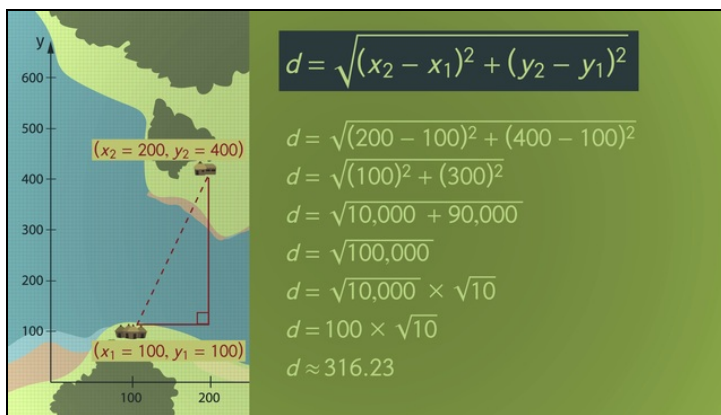




Printable Worksheets from [sofatutor.com](https://www.sofatutor.com)

The Distance Formula



- 1 Find the right distance formula.
 - 2 Explain how to calculate the distance between two points.
 - 3 Calculate the distance from Carlos' village to his school.
 - 4 Connect the ordered pairs with the right formula.
 - 5 Determine the distance.
 - 6 Examine the distances of the given points.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



Find the right distance formula.

Choose the correct formula.

- $(x_2 - x_1)^2 + (y_2 - y_1)^2 = d$ **A**
- $(x_2 - x_1)^2 + (y_2 - y_1)^2 = d^2$ **B**
- $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ **C**
- $d = \sqrt{(x_2 - x_1) + (y_2 - y_1)}$ **D**
- $d = \sqrt{(x_2 - y_2)^2 + (x_1 - y_1)^2}$ **E**

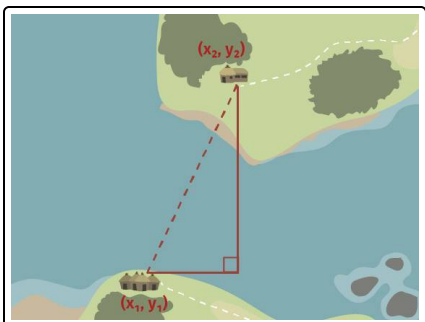


Hints for solving these problems

1
of 6

Find the right distance formula.

Hint #1



Here you see a right triangle with the points (x_1, y_1) and (x_2, y_2) .

Hint #2

Use the Pythagorean property:

The sum of the squares of the legs of any right triangle is the same as the square of the hypotenuse.

Hint #3

The distance is the length of the hypotenuse.

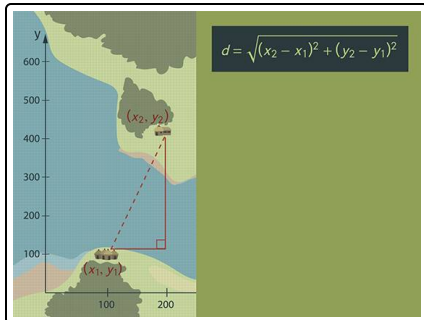


Answers and detailed answer explanations for these problems

1
of 6

Find the right distance formula.

Answer key: B, C



Two points, (x_1, y_1) as well as (x_2, y_2) , of a right triangle are given.

With the Pythagorean theorem, we get

$$(x_2 - x_1)^2 + (y_2 - y_1)^2 = c^2,$$

where c is the length of the hypotenuse and $|x_2 - x_1|$ and $|y_2 - y_1|$ the lengths of the legs.

Because the length of the hypotenuse is the desired distance, we

replace it by d :

$$(x_2 - x_1)^2 + (y_2 - y_1)^2 = d^2.$$

Lastly, we take the square root on both sides and change the sides to get the **distance formula**

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}.$$