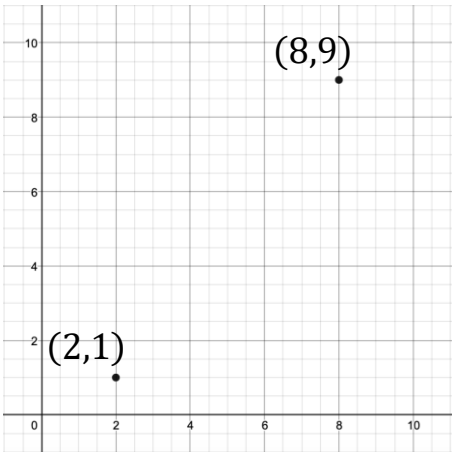
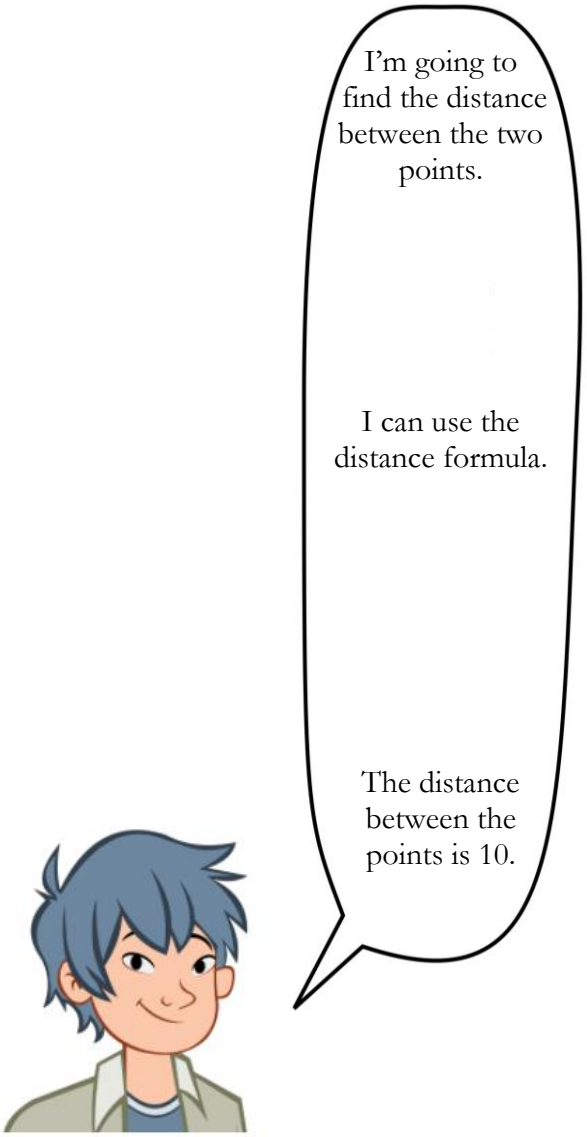
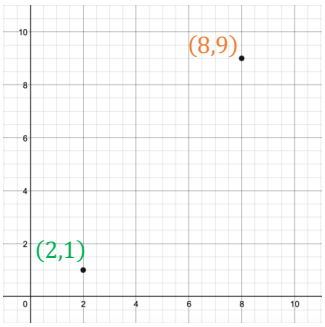
Find the distance between $(8, 9)$ and $(2, 1)$.



Kaden's "Distance Formula" Method





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

$$d = \sqrt{(8 - 2)^2 + (9 - 1)^2}$$

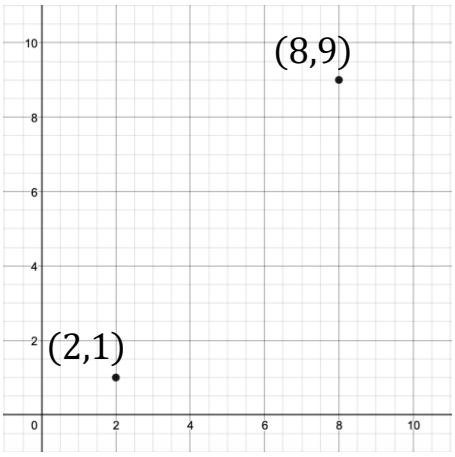
$$d = \sqrt{6^2 + 8^2}$$

$$d = \sqrt{36 + 64}$$

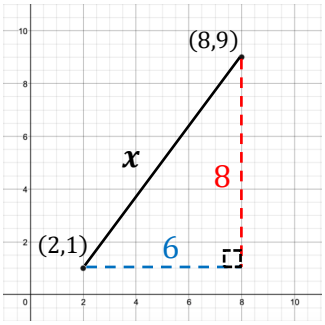
$$d = \sqrt{100}$$

$$d = 10$$

Find the distance between $(8, 9)$ and $(2, 1)$.



Maddie's "Pythagorean Theorem" Method



$a^2 + b^2 = x^2$

$6^2 + 8^2 = x^2$

$36 + 64 = x^2$

$100 = x^2$

$\sqrt{100} = x$

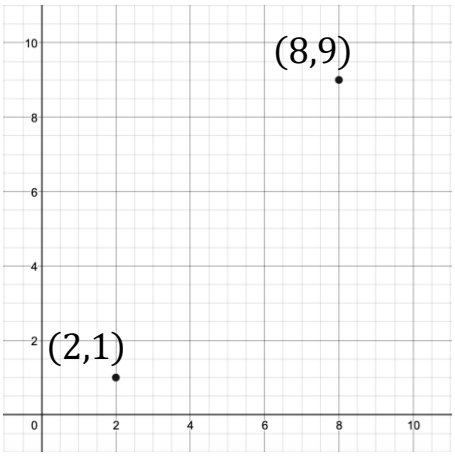
$10 = x$

I draw a right triangle where the hypotenuse is the distance between the points.

I can use the Pythagorean Theorem.

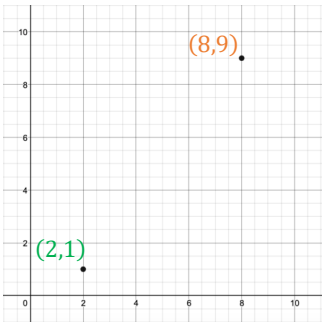
The distance between the points is 10.

Find the distance between $(8, 9)$ and $(2, 1)$.



Kaden's "Distance Formula" Method

I'm going to find the distance between the two points.



I can use the distance formula.

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

$$d = \sqrt{(8 - 2)^2 + (9 - 1)^2}$$

$$d = \sqrt{6^2 + 8^2}$$

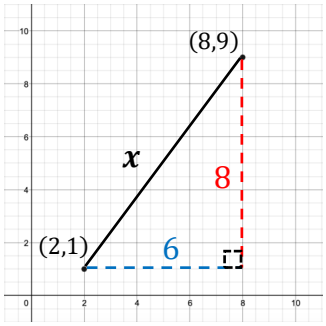
$$d = \sqrt{36 + 64}$$

$$d = \sqrt{100}$$

$$d = 10$$

The distance between the points is 10.

Maddie's "Pythagorean Theorem" Method



I draw a right triangle where the hypotenuse is the distance between the points.

I can use the Pythagorean Theorem.

$$a^2 + b^2 = x^2$$

$$6^2 + 8^2 = x^2$$

$$36 + 64 = x^2$$

$$100 = x^2$$

$$\sqrt{100} = x$$

$$10 = x$$

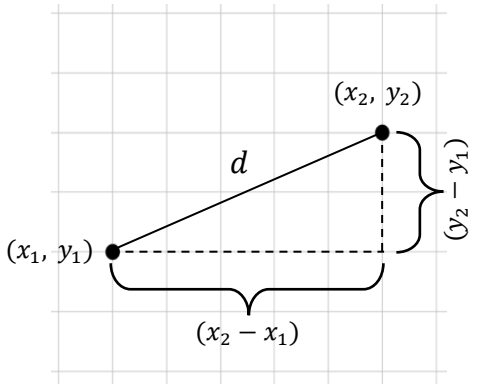
The distance between the points is 10.

1) What are the similarities and differences between Kaden and Maddie's methods?

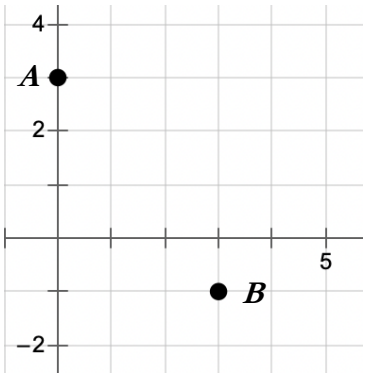
Similarities	Differences

2) Why did Kaden and Maddie get the same answer for the distance between (2, 1) and (8, 9) when they used different methods?

3) Maddie thinks $(x_2 - x_1)$ can be substituted for a and $(y_2 - y_1)$ can be substituted for b in the Pythagorean Theorem. Do you agree or disagree? Explain.



4) Use both the distance formula and the Pythagorean Theorem to find the distance between *A* (0, 3) and *B* (3, -1).



Find t

Kaden showed me that the Pythagorean Theorem and the distance formula can both be used to find distances! I would never have made that connection without seeing them side by side.

m" Method

draw a right iangle where e hypotenuse is the distance between the points.

I ca
distance for

I can use the Pythagorean Theorem.

$d = \sqrt{(8-2)^2 +$

$d = \sqrt{6^2 + 8^2}$

$d = \sqrt{36 + 64}$

$d = \sqrt{100}$

$d = 10$

$6^2 + 8^2 =$

$36 + 64 = x^2$

$100 = x^2$

$\sqrt{100} = x$

$10 = x$

The distance between the points is 10.

distance n the p s 10.