Pythagorean Theorem On Coordinate Systems -   Step-by-Step Lesson
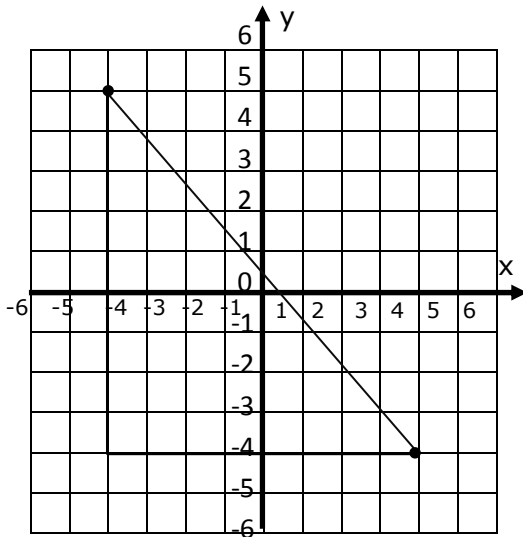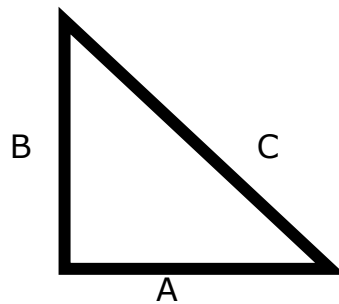
Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Explanation:

Step1) To find the diagonal, we create a triangle and find the length of the two legs (A and B).

Find the length of leg A: Count left -right distance (x distance) between the two points. On the x we move from -4 to 4 for a total distance on 8.

Find the length of leg B: Count up-down distance (y distance) between the two points. On the y we move from -4 to 5 for a total distance on 9.
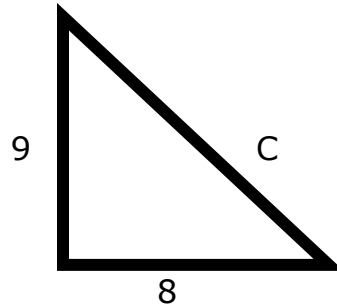
Step 2) Using the Pythagorean Theorem, we count the column and given the value of a and b from find the length of two points a and b.

Line A travels from -4 to 4 or 8 units.

Line B travels from 5 to -4 or 9 total units.

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   9  |  \   C
      |   \
      |____\
        8
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Step 3) $a^2 + b^2 = c^2$

$8^2 + 9^2 = c^2$

$64 + 81 = c^2$

$145 = c^2$

$\sqrt{145} = c$

$c = 12.04$