FIND THE ERROR:

Distance Between Two Points

In each problem below, a student tried to find the distance between two points using the Pythagorean theorem but made an error. Circle the error in each student's work, explain what the error is, and show how to correctly find the distance between the two points using the Pythagorean theorem. Round your answer to the nearest hundredth.

Delilah

Circle the error:

$|1 - 4| = |-3| = 3$

$|5 - 2| = |3| = 3$

$3^2 + 3^2 = c^2$

$6 + 6 = c^2$

$12 = c^2$

$\sqrt{12} = c$

$3.464 \approx c$

Distance ≈ 3.46 units

Show the correct work:

$|1 - 4| = |-3| = 3$

$|5 - 2| = |3| = 3$

$3^2 + 3^2 = c^2$

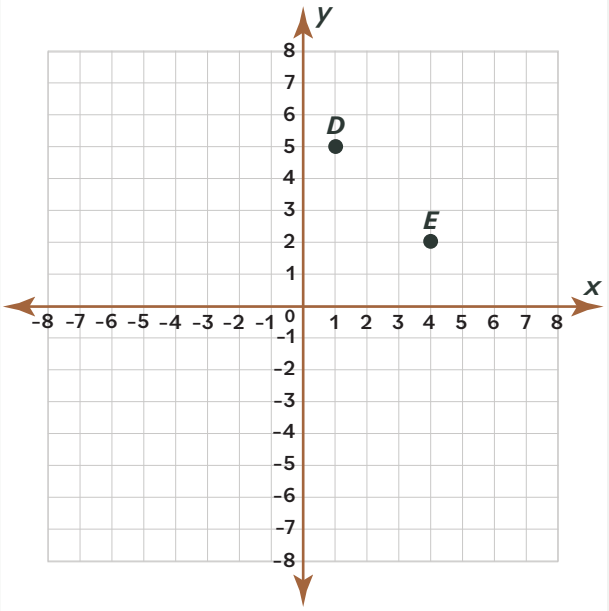
$9 + 9 = c^2$

$18 = c^2$

$\sqrt{18} = c$

$4.242 \approx c$

Distance ≈ 4.24 units



What error did Delilah make? Delilah incorrectly squared the lengths of the legs. 3^2 is 9, not 6.

Tucker

Circle the error:

$|-1 - 3| = |-2| = 2$

$|5 - (-2)| = |7| = 7$

$2^2 + 7^2 = c^2$

$4 + 49 = c^2$

$53 = c^2$

$\sqrt{53} = c$

$7.280 \approx c$

Distance ≈ 7.28 units

Show the correct work:

$|-1 - 3| = |-4| = 4$

$|5 - (-2)| = |7| = 7$

$4^2 + 7^2 = c^2$

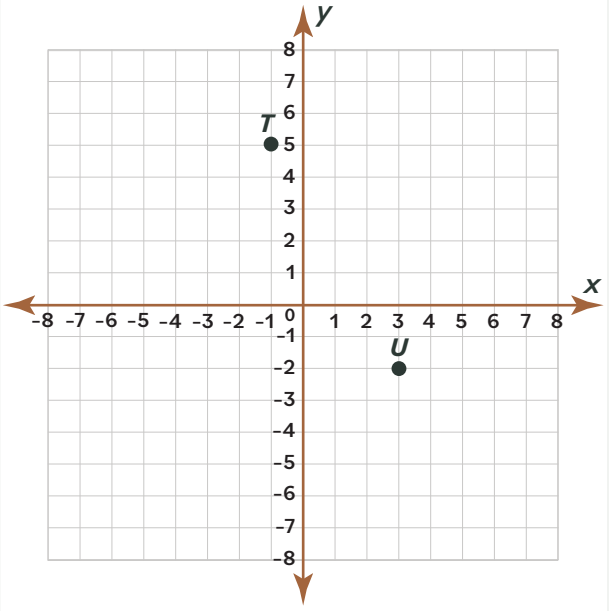
$16 + 49 = c^2$

$65 = c^2$

$\sqrt{65} = c$

$8.062 \approx c$

Distance ≈ 8.06 units



What error did Tucker make? Tucker made a subtraction error. $-1 - 3 = -4$, not -2.

FIND THE ERROR:

Distance Between Two Points

Keep going! Circle the error in each student's work, explain what the error is, and show how to correctly find the distance between the two points using the Pythagorean theorem. Round your answer to the nearest hundredth.

Graham

Circle the error:

$|4 - 1| = |3| = 3$

$|2 - 4| = |-2| = 2$

$3^2 + 2^2 = c^2$

$9 + 4 = c^2$

$13 = c^2$

$\sqrt{13} = c$

$3.605 \approx c$

Distance ≈ 3.61 units

Show the correct work:

$|-4 - 1| = |-5| = 5$

$|2 - 4| = |-2| = 2$

$5^2 + 2^2 = c^2$

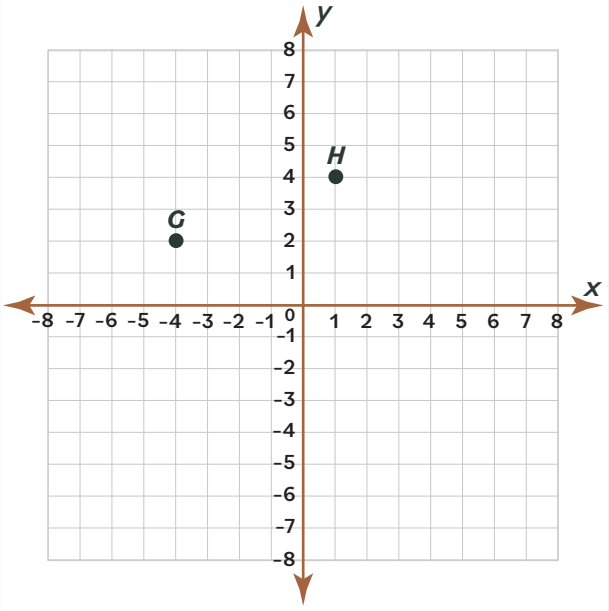
$25 + 4 = c^2$

$29 = c^2$

$\sqrt{29} = c$

$5.385 \approx c$

Distance ≈ 5.39 units



What error did Graham make? Graham used 4 as the x-coordinate of point G instead of the actual x-coordinate, −4, which caused him to get a leg length of 3 instead of the actual length of 5.

Kylie

Circle the error:

$|2 - 5| = |-3| = 3$

$|-5 - 1| = |-6| = 6$

$a^2 + 3^2 = 6^2$

$a^2 + 9 = 36$

$a^2 = 27$

$a = \sqrt{27}$

$a \approx 5.196$

Distance ≈ 5.20 units

Show the correct work:

$|2 - 5| = |-3| = 3$

$|-5 - 1| = |-6| = 6$

$3^2 + 6^2 = c^2$

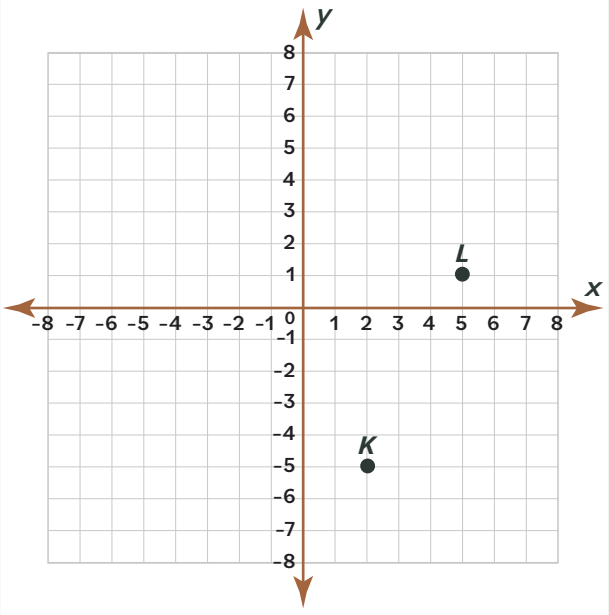
$9 + 36 = c^2$

$45 = c^2$

$\sqrt{45} = c$

$6.708 \approx c$

Distance ≈ 6.71 units



What error did Kylie make? Kylie used the length of one of the legs, 6, as the hypotenuse of the triangle.