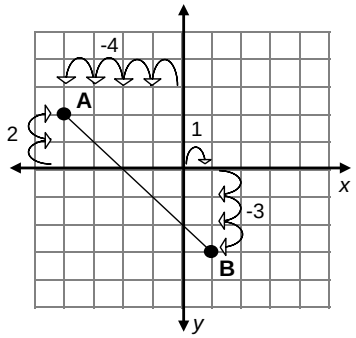
DISTANCE FORMULA

ANSWERS

Find the distance for each line segment. Round all answers to the nearest whole number.

Helpful Example

TO CALCULATE THE DISTANCE BETWEEN TWO POINTS YOU NEED TO FIND THE COORDINATES AND PUT THEM INTO THE FORMULA BELOW.



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

THIS EQUATION COMES FROM THE PYTHAGOREAN THEOREM, $C^2 = A^2 + B^2$.

$x_2 - x_1$ AND $y_2 - y_1$ ARE THE LENGTHS OF THE LEGS (A AND B).

coordinates

A (-4 , 2)

B (1 , -3)

(-4 , 2) , (1 , -3)

(x_1 , y_1) , (x_2 , y_2)

7 x 7 = 49 and 8 x 8 = 64
49 is closer to 50.
$\sqrt{50}$ is about **7**.

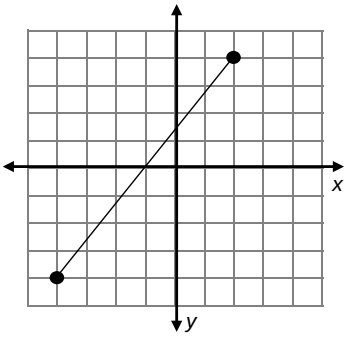
$$d = \sqrt{(1 - {}^-4)^2 + ({}^-3 - 2)^2} = \sqrt{(5)^2 + (-5)^2} = \sqrt{25 + 25} = \sqrt{50}$$

1 - (-4) = 1 + 4 = **5** and -3 - 2 = **-5**

distance ≈ 7

THE PYTHAGOREAN THEOREM AND THE DISTANCE FORMULA ARE THE SAME. WHEN USING GRAPHS YOU CAN ACTUALLY USE THE PYTHAGOREAN THEOREM BUT YOU NEED TO ALSO UNDERSTAND THE DISTANCE FORMULA.

1.



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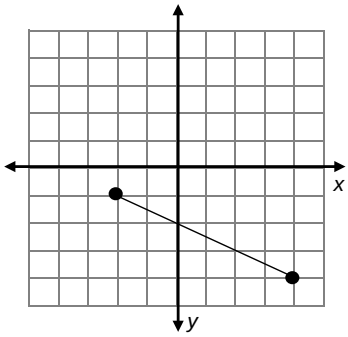
2.



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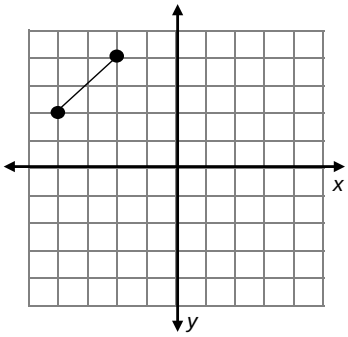
3.



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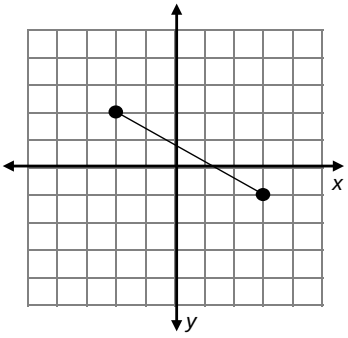

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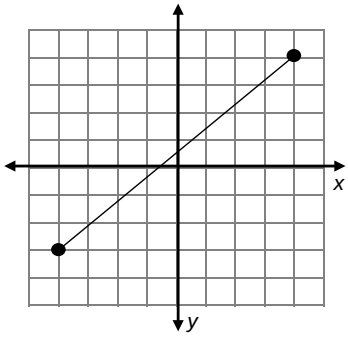
5.



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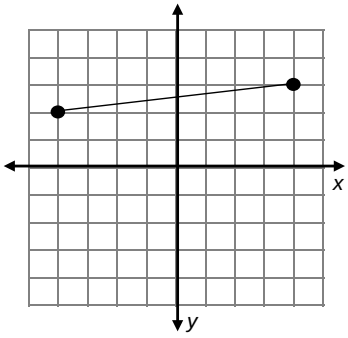
6.



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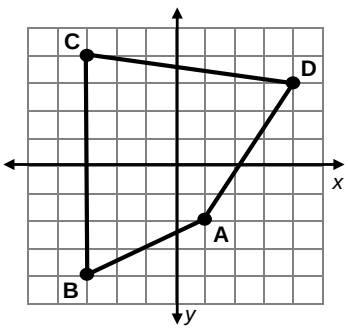
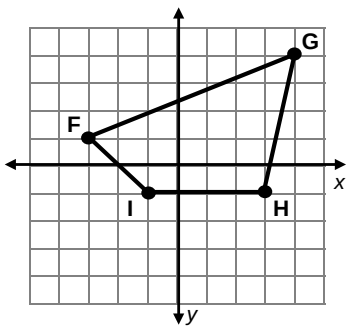
Use the figures to find the distance between the given line segments. Round all answers to the nearest whole number.



7. Distance $\overline{AB}$ **4**

8. Distance $\overline{BC}$ **8**

9. Distance $\overline{AD}$ **6**



10. Distance $\overline{HI}$ **4**

11. Distance $\overline{FI}$ **3**

12. Distance $\overline{GH}$ **5**