

Study Guide and Intervention

7MG3.2

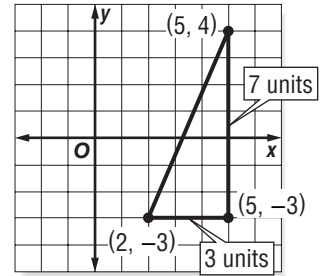
Distance on the Coordinate Plane

You can use the Pythagorean Theorem to find the distance between two points on the coordinate plane.

Example Find the distance between points $(2, -3)$ and $(5, 4)$.

Graph the points and connect them with a line segment. Draw a horizontal line through $(2, -3)$ and a vertical line through $(5, 4)$. The lines intersect at $(5, -3)$.

Count units to find the length of each leg of the triangle. The lengths are 3 units and 7 units. Then use the Pythagorean Theorem to find the hypotenuse.

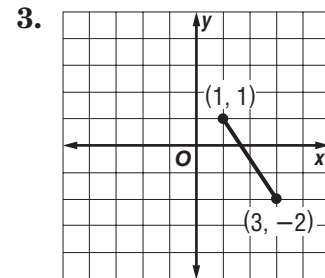
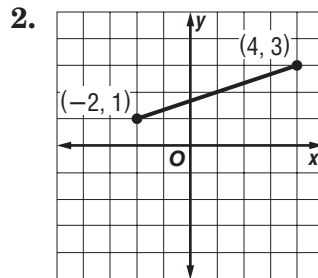
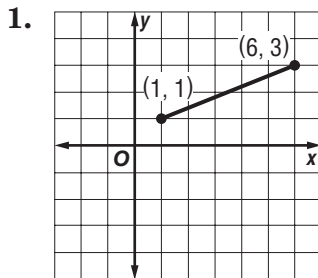


$c^2 = a^2 + b^2$	The Pythagorean Theorem
$c^2 = 3^2 + 7^2$	Replace a with 3 and b with 7.
$c^2 = 9 + 49$	Evaluate 3^2 and 7^2 .
$c^2 = 58$	Simplify.
$\sqrt{c^2} = \sqrt{58}$	Take the square root of each side.
$c \approx 7.6$	Simplify.

The distance between the points is about 7.6 units.

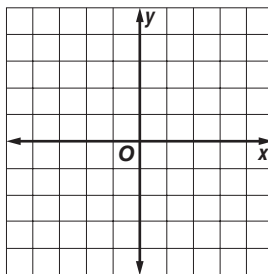
Exercises

Find the distance between each pair of points whose coordinates are given. Round to the nearest tenth if necessary.

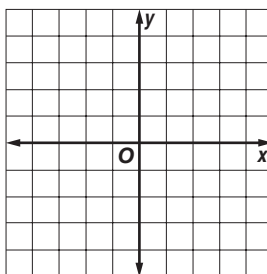


Graph each pair of ordered pairs. Then find the distance between the points. Round to the nearest tenth if necessary.

4. $(4, 5), (0, 2)$



5. $(0, -4), (-3, 0)$



6. $(-1, 1), (-4, 4)$

