

Finding Distance Between Points on a Grid

Grade 8 math · Worksheet · Standards: 8.G.B.8

Name: _____ Date: _____ Class: _____

These problems use the Pythagorean Theorem to find distances and perimeters on a coordinate plane (standard 8.G.B.8). The first problems stay on grid lines; later ones use slanted segments, perimeters, and map scales.

Draw the right triangle under every segment and label both legs before squaring.

Standards: 8.G.B.8 · **Level:** Grade 8

Problem 1 Across a row (easy)

Find the distance between $(-7, 4)$ and $(5, 4)$.

Problem 2 Down a column (easy)

Find the distance between $(3, -6)$ and $(3, 9)$.

Problem 3 From the origin (easy)

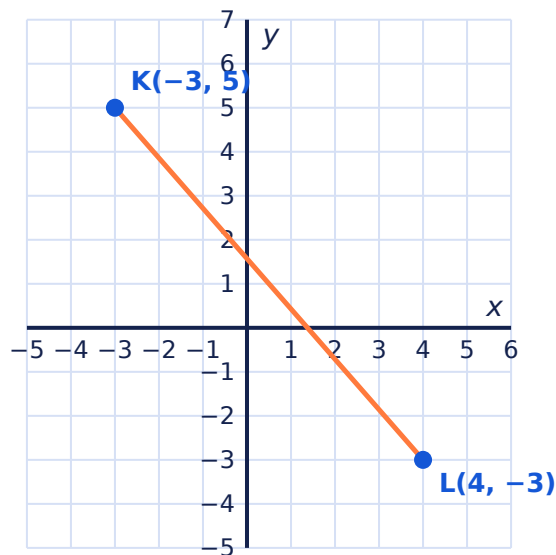
A sensor is placed at $(-36, 77)$ on a coordinate plane. How many units is it from the origin?

Problem 4 Not a whole number (easy)

Find the distance between $(-4, 7)$ and $(2, -2)$ to the nearest tenth.

Problem 5 Read the graph (medium)

Find the distance between points K and L in the graph. Give an exact answer and a decimal to the nearest tenth.



Points K and L.

Problem 6 Twenty units (medium)

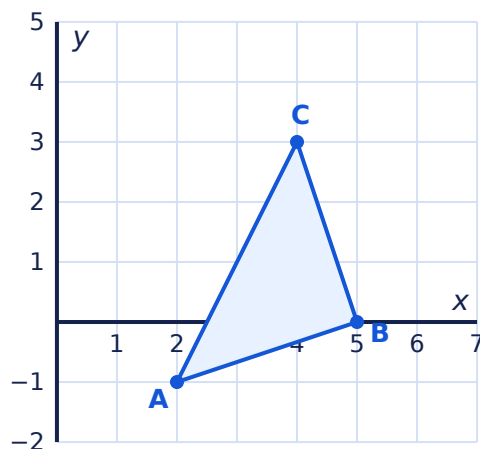
Find the distance between $(-6, -3)$ and $(10, 9)$.

Problem 7 Equal legs (medium)

Find the distance between $(2, -7)$ and $(-4, -1)$. Write the answer in simplest radical form and as a decimal.

Problem 8 Right triangle on a grid (medium)

Triangle ABC has vertices $A(2, -1)$, $B(5, 0)$, and $C(4, 3)$. Find the squared length of each side and decide whether the triangle is a right triangle.



Triangle ABC.

Problem 9 Perimeter of a rectangle (easy)

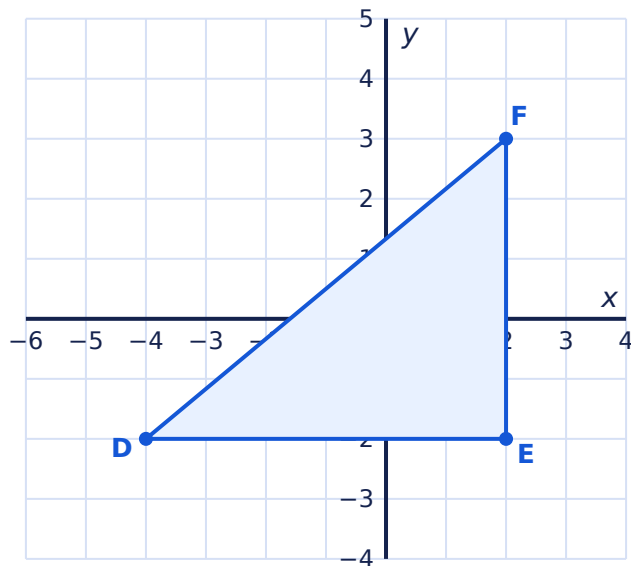
A rectangle has vertices $(-2, -3)$, $(4, -3)$, $(4, 2)$, and $(-2, 2)$. Find its perimeter.

Problem 10 Perimeter of a triangle (medium)

A triangle has vertices $(1, 1)$, $(6, 1)$, and $(6, 13)$. Find its perimeter.

Problem 11 Triangle perimeter from a graph (medium)

Find the perimeter of $\triangle DEF$ to the nearest tenth.



Triangle DEF.

Problem 12 Find the missing coordinate (hard)

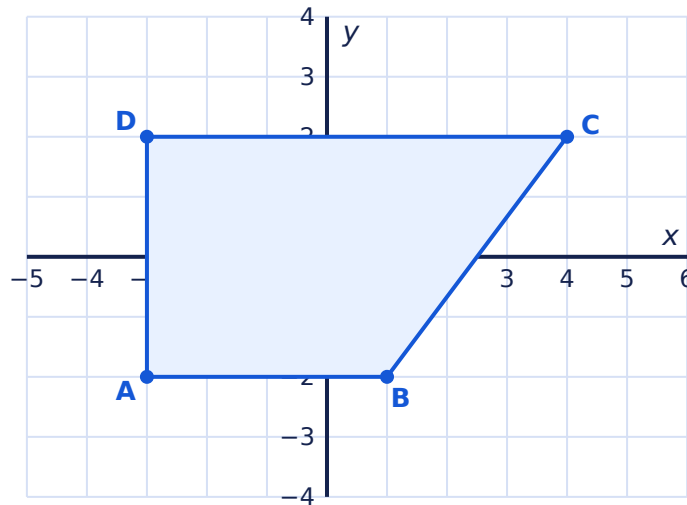
Point P is at $(2, 1)$ and point Q is at $(x, 9)$. The distance PQ is 10. Find the possible values of x .

Problem 13 Isosceles check (hard)

Triangle ABC has vertices $A(-1, 2)$, $B(5, 2)$, and $C(2, 8)$. Show that the triangle is isosceles and find its perimeter to the nearest tenth.

Problem 14 Trapezoid perimeter (medium)

Find the perimeter of quadrilateral ABCD.



Quadrilateral ABCD.

Problem 15 Which is closer? (hard)

Point A is at $(-7, 5)$ and point B is at $(6, -6)$. Which point is closer to the origin? Show the squared distances.

Problem 16 Hiking map (hard)

On a trail map, one unit is 1 mile. The trailhead is at $(-5, -3)$ and the campsite is at $(3, 2)$. How far apart are they in a straight line, to the nearest tenth of a mile?

Problem 17 Drone delivery (hard)

On a city map, one unit is 0.25 mile. A drone flies straight from a store at $(-6, -2)$ to a house at $(9, 6)$. How many miles does it fly?

Problem 18 Garden fence (hard)

A garden plan has vertices $(0, 0)$, $(8, 0)$, and $(8, 15)$, and each grid unit is 2 feet. Fencing costs \$3.50 per foot. Find the cost of fencing the whole perimeter.

Problem 19 Robot route (hard)

A robot drives from $A(-5, -2)$ to $B(-2, 4)$ and then to $C(4, -2)$. Find the total length of the route to the nearest tenth. How much shorter is the straight path from A to C?

Problem 20 Rhombus on the grid (hard)

Quadrilateral WXYZ has vertices $W(-5, 0)$, $X(0, 2)$, $Y(5, 0)$, and $Z(0, -2)$. Show that all four sides are equal and find the perimeter to the nearest tenth.