

Day 3: Distance Formula Practice

Problem 1: Find the distance between the following points. Round to the nearest tenth.

a. $(-4, 2)$ and $(2, -1)$

$$d = \sqrt{(2 - (-4))^2 + (-1 - 2)^2}$$

$$d = \sqrt{(6)^2 + (-3)^2}$$

$$d = \sqrt{36 + 9}$$

$$d = \sqrt{45}$$

$$d = 6.7$$

b. $(-2, -3)$ and $(-2, 4)$

$$d = \sqrt{(-2 - (-2))^2 + (4 - (-3))^2}$$

$$d = \sqrt{(0)^2 + (7)^2}$$

$$d = \sqrt{49}$$

$$d = 7$$

c. $(3, 2)$ and $(5, -2)$

$$d = \sqrt{(5 - 3)^2 + (-2 - 2)^2}$$

$$d = \sqrt{(2)^2 + (-4)^2}$$

$$d = \sqrt{4 + 16}$$

$$d = \sqrt{20}$$

$$d = 4.5$$

Problem 2

- Your house is located 3 blocks east and 4 blocks north.
- Town Center Mall is located 1 block west and 5 blocks north.
- Six Flags is centered at the 5 blocks west and 1 block south.
- Iowa Aquarium is located 6 blocks east and 4 blocks south.

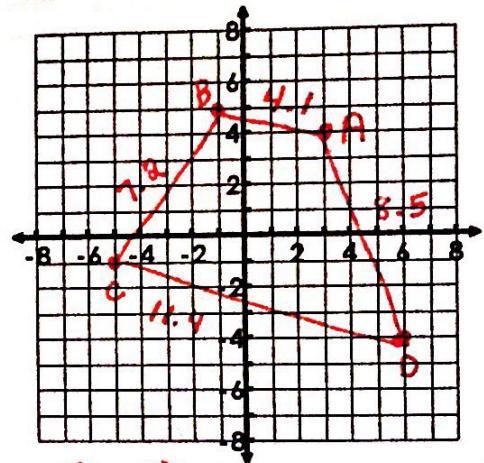
A. Plot your house. Label it as Point A. What is the ordered pair? (3, 4)

B. Plot Town Center Mall. Label it as point B. What is the ordered pair? (-1, 5)

C. Plot the Six Flags. Label it as point C. What is the ordered pair? (-5, -1)

D. Plot Iowa Aquarium. Label it as point D. What is the ordered pair? (6, -4)

E. Connect all four points.



Using the distance formula, find the distance (show all your work). Round to the nearest tenth.

F. AB

G. BC

H. CD

I. AD

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

$$d = \sqrt{(-1 - (-5))^2 + (5 - (-1))^2}$$

$$d = \sqrt{(-5 - 6)^2 + (-1 - (-4))^2}$$

$$d = \sqrt{(6 - 3)^2 + (-4 - 4)^2}$$

$$d = \sqrt{(4)^2 + (-1)^2}$$

$$d = \sqrt{(4)^2 + (6)^2}$$

$$d = \sqrt{(11)^2 + (3)^2}$$

$$d = \sqrt{(3)^2 + (-8)^2}$$

$$d = \sqrt{17}$$

$$d = \sqrt{52}$$

$$d = \sqrt{130}$$

$$d = \sqrt{73}$$

$$d = 4.1 \text{ blocks}$$

$$d = 7.2 \text{ blocks}$$

$$d = 11.4 \text{ blocks}$$

$$d = 8.5 \text{ blocks}$$

How many blocks did you travel all together if you left your house to go to the mall, then Six Flags, and then the Iowa Aquarium?

$$4.1 + 7.2 + 11.4 + 8.5 = 31.2 \text{ blocks (if you return home)}$$

$$4.1 + 7.2 + 11.4 = 22.7 \text{ (if you end at the aquarium)}$$