What you will learn about:
Distance Formula
Slope and Midpoint

Distance Formula

$(x_1, y_1)(x_2, y_2)$

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

Find the distance between the two points.

$x_1\ y_1 \quad x_2\ y_2$

(2, -8), (-3, 3)

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

$= \sqrt{(-5)^2 + (11)^2}$

$= \sqrt{25 + 121}$

$= \sqrt{146}$

$x_1\ y_1 \quad x_2\ y_2$

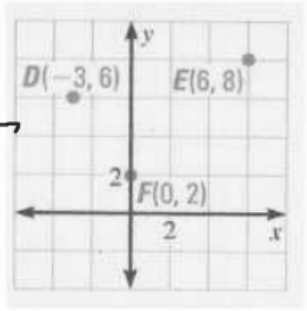
(5, 8), (-2, 3)

$d = \sqrt{(-2-5)^2 + (3-8)^2}$

$\sqrt{(-7)^2 + (-5)^2}$

$\sqrt{49 + 25} = \sqrt{74}$

Find the distance between each pair of points.



$DE = \sqrt{85}$

$EF = \sqrt{(6-0)^2 + (8-2)^2}$

$= \sqrt{6^2 + 6^2}$

$= \sqrt{36 + 36}$

$= \sqrt{72}$

$= 6\sqrt{2}$

$DF = \sqrt{(-3-0)^2 + (6-2)^2}$

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

$\sqrt{9 + 16}$

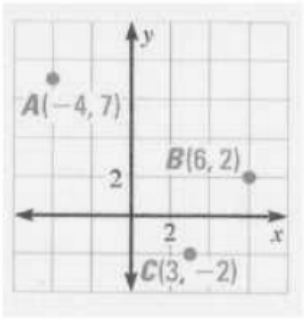
$\sqrt{25} = 5$

$DE = \sqrt{(6-(-3))^2 + (8-6)^2}$

$= \sqrt{9^2 + 2^2}$

$= \sqrt{81 + 4}$

$= \sqrt{85}$



$AB = \sqrt{125}$

$BC = 5$

$AC = \sqrt{130}$

$AB = \sqrt{(6-(-4))^2 + (2-7)^2}$

$\sqrt{10^2 + (-5)^2}$

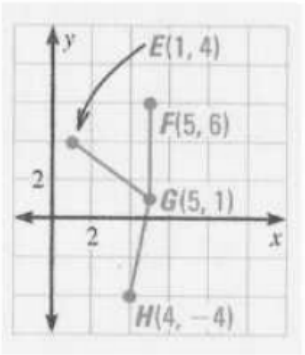
$\sqrt{125} = 5\sqrt{5}$

$EG = \sqrt{25} = 5$

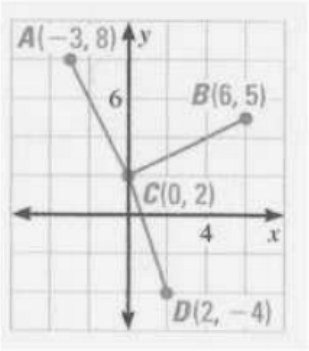
$FG = \sqrt{25} = 5$

$GH = \sqrt{26}$

Find the lengths of the segments. Tell whether any of the segments have the same measure.



$\overline{EG} \cong \overline{FG}$



$AC = \sqrt{45}$

$BC = \sqrt{45}$

$DC = \sqrt{40}$

$\overline{AC} \cong \overline{BC}$

Use the Distance formula to decide whether $\overline{PQ} \cong \overline{QR}$

P(4, -4)	P(5, 1)	P(-2,0)
Q(1, -6)	Q(-5, -7)	Q(10, -14)
R(-1, -3)	R(-3, 6)	R(-4, -2)