1. Gold Nugget
2. Alg Review Sem 2 Week #4 WS and p. 424: 38, 40, 42

6-7 Polygons in the Coordinate Plane

Quick Review

To determine whether sides or diagonals are congruent, use the Distance Formula. To determine the coordinate of the midpoint of a side, or whether the diagonals bisect each other, use the Midpoint Formula. To determine whether opposite sides are parallel, or whether diagonals or sides are perpendicular, use the Slope Formula.

Example

$\triangle XYZ$ has vertices $X(1, 0)$, $Y(-2, -4)$, and $Z(4, -4)$. Is $\triangle XYZ$ *scalene*, *isosceles*, or *equilateral*?

To find the lengths of the legs, use the Distance Formula.

$$XY = \sqrt{(-2 - 1)^2 + (-4 - 0)^2} = \sqrt{9 + 16} = 5$$

$$YZ = \sqrt{(4 - (-2))^2 + (-4 - (-4))^2} = \sqrt{36 + 0} = 6$$

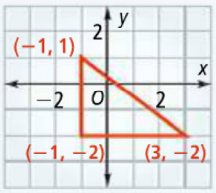
$$XZ = \sqrt{(4 - 1)^2 + (-4 - 0)^2} = \sqrt{9 + 16} = 5$$

Two side lengths are equal, so $\triangle XYZ$ is isosceles.

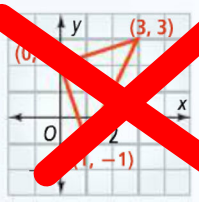
Exercises

Determine whether $\triangle ABC$ is *scalene*, *isosceles*, or *equilateral*.

38.



39.



What is the most precise classification of the quadrilateral?

40. $G(2, 5)$, $R(5, 8)$, $A(-2, 12)$, $D(-5, 9)$

42. $Q(4, 5)$, $U(12, 14)$, $A(20, 5)$, $D(12, -4)$