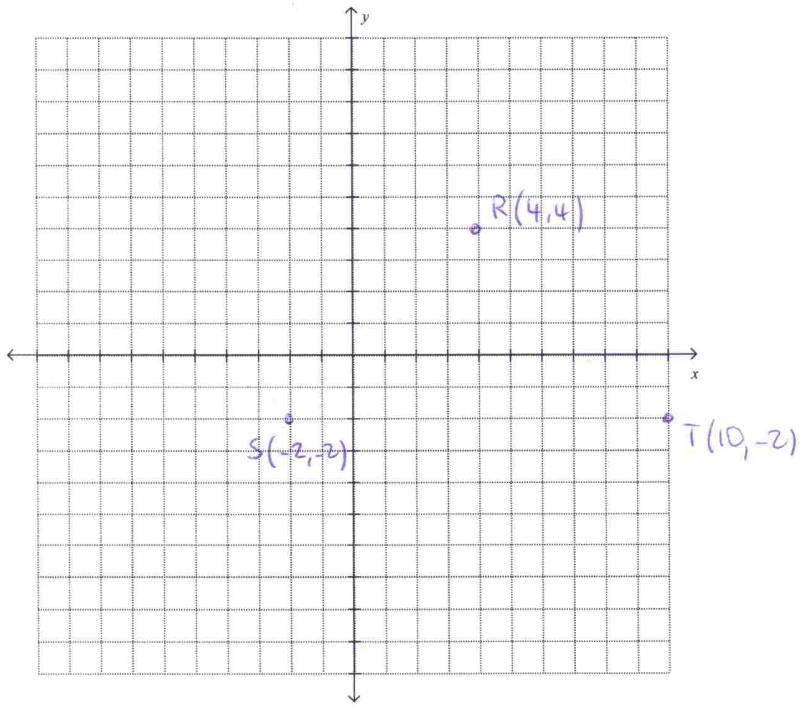
MPM2D **Quiz #6**

The vertices of a triangle are S(–2, –2), T(10, –2), and R(4, 4). What type of triangle is this? Verify your answer.



① find length SR

$$d = \sqrt{(-2-4)^2 + (-2-4)^2}$$
$$d = \sqrt{(-6)^2 + (-6)^2}$$
$$= \sqrt{36+36}$$
$$= \sqrt{72}$$

find length RT

$$d = \sqrt{(4-10)^2 + (4-(-2))^2}$$
$$= \sqrt{(-6)^2 + 6^2}$$
$$= \sqrt{36+36}$$
$$= \sqrt{72}$$

find length ST

$$d = \sqrt{(-2-10)^2 + (-2-(-2))^2}$$
$$= \sqrt{(-12)^2 + (0)^2}$$
$$= \sqrt{144}$$
$$= 12$$

∴ ΔRST is isosceles (2 sides have equal length)

② check $\angle SRT$

find slope RS

$$m = \frac{-2-4}{-2-4}$$
$$= \frac{-6}{-6}$$
$$= 1$$

find slope RT

$$m = \frac{-2-4}{10-4}$$
$$= \frac{-6}{6}$$
$$= -1$$

$m_{RS} \perp m_{RT}$

∴ $\angle SRT = 90°$

∴ ΔRST is RIGHT isosceles