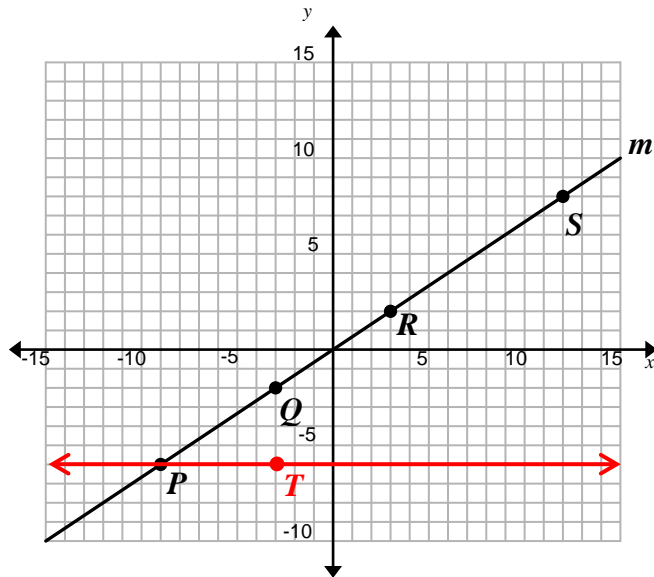


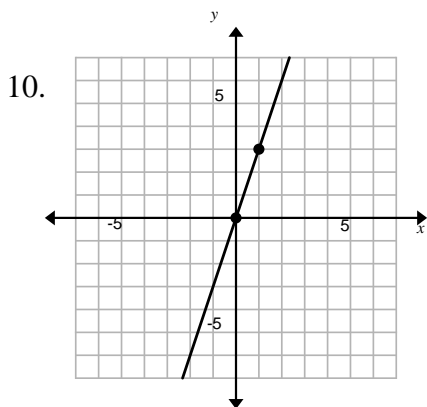


Using Angle-Angle Similarity to Explain Why Slope is Constant on a Line

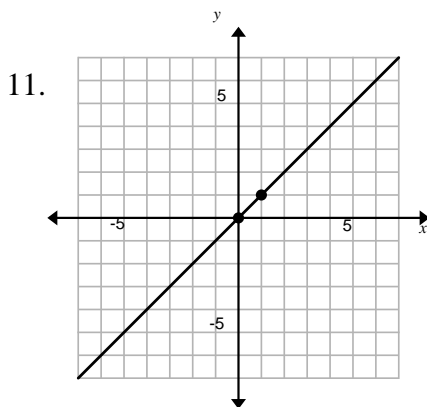
- On the graph to the right, four points with integer coordinates have been plotted on line m .
- A slope triangle has been started, using points P and Q . The right angle vertex is labeled T . Complete the triangle.
- Draw the slope triangle using points R and S . Label the right angle vertex V .
- Extend \overline{PT} (done for you) and \overline{RV} to create horizontal (and parallel) lines across the coordinate plane.
- Since line m is a transversal intersecting the parallel lines you just created, you know that $\angle QPT$ is a corresponding angle to \angle _____. Corresponding angles are _____.
- The two right angles \angle ____ and \angle ____ are _____.
- Therefore, Δ _____ is similar to Δ _____ by angle-angle similarity.
- When we have similar triangles, we know that the ratios of the corresponding sides must be equal. Therefore, the slope of the line is constant. What is the slope of this line? _____
- Start at $(0, 0)$. Move right 15 units. After completing these steps, how many units up is line m ? _____ How is this related to the slope?



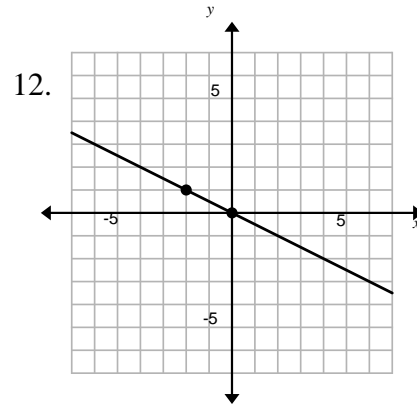
For problems 10 - 12, determine (a) the slope of the line and (b) the missing coordinate for a point on the line.



Slope is _____
(2, __)



Slope is _____
(5, __)



Slope is _____
(6, __)