[11-12-01-T]

The Coordinate Plane

[1] Plot the points $P(2, 5)$, $Q(-2, 5)$, $R(-2, -5)$, $S(2, -5)$.

[2] Suppose that u and v are positive numbers. Plot the points $P(u, v)$, $Q(-u, v)$, $R(-u, -v)$, $S(u, -v)$.

For each of the following (3-7), PQ is a line segment with endpoints $P(x, y)$ and $Q(x, y)$ in the coordinate plane. Graph PQ, then state the value of Δx, Δy, and of the slope m_{PQ}.

[3] Suppose PQ is a line segment endpoints $P(2, 3)$ and $Q(5, 7)$.

[4] Suppose PQ is a line segment endpoints $P(-2, -3)$ and $Q(-5, -7)$.

[5] Suppose PQ is a line segment endpoints $P(-2, 3)$ and $Q(-5, 7)$.

[5] Suppose PQ is a line segment endpoints $P(2, -3)$ and $Q(5, -7)$.

[6] Suppose PQ is a line segment endpoints $P(-2, -3)$ and $Q(5, 7)$.

[7] Suppose PQ is a line segment endpoints $P(-2, 3)$ and $Q(5, -7)$.

[8] Suppose that PQ has endpoints $P(x_1, y_1)$, $Q(x_2, y_2)$. Prove that the number computed for the slope is the same whether one uses $\frac{y_1-y_2}{x_1-x_2}$ or $\frac{y_2-y_1}{x_2-x_1}$.