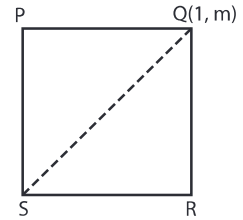


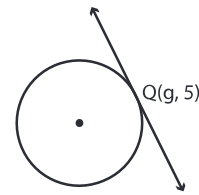
# Identifying Unknowns

- 1) PQRS is a square. If Q(1, m) lies on the diagonal  $\overline{QS}$  whose equation is  $x - y = -6$ , then what is the value of m?



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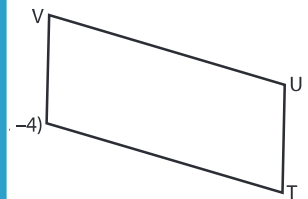
- 2) The equation of a tangent is  $2x + y = -3$  which touches the circle at Q(g, 5). What is the value of g?



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- 3) If S(-7, -4) is a vertex of a parallelogram and the equation of the diagonal  $\overline{ST}$  is given by  $2x - ay = -42$ , then find the value of a.

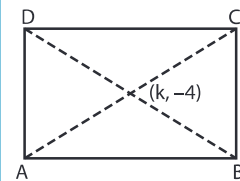
The equation of the diagonal  $\overline{ST}$  is given by



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- 4) ABCD is a rectangle with vertices A(0, 0), B(10, 0), C(10, 10) and D(0, 10). The diagonals intersect at the point (k, -4). Find the value of k.

The equation of the diagonal  $\overline{AC}$  is given by  $2x + 5y = -2$ . If (k, -4) is the intersection of the diagonals, find the value of k.



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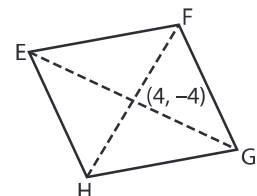
- 5) L(6, 12) is one of the vertices of a rhombus LMNO. The equation of the diagonal  $\overline{LN}$  is given by  $-hx + 4y = -6$ . Find the value of h.

The equation of the diagonal  $\overline{LK}$  is given by  $2x + 5y = -2$ . If (k, -4) is the intersection of the diagonals, find the value of k.



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- 6) The diagonals of the rhombus meet at (4, -4). Find the value of w if one of the diagonals has the equation  $x - wy = -4$ .



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