

Name : \_\_\_\_\_

## Parallel and Perpendicular Lines

Sheet 1

- 1) The coordinates of P and Q are (2, 6) and (4, 5) respectively. Equation of a line RS is  $y = 2x - 3$ . Prove that the lines PQ and RS are perpendicular.
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- 2) J(-4, 2) is the center of a circle. K(-1, 5) is any point on the circle. A line  $y = x + 9$  is a chord of the circle. Prove that the line segment JK is parallel to the chord.
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- 3) A line ST passes through the points S(2, 3) and T(4, 5). A line UV passes through the points U(1, 2) and V(3, 4). The gradient of line UV is  $\frac{1}{2}$ . Prove that the lines ST and UV are parallel.
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- 4) The endpoints of a line segment AB are A(2, 3) and B(4, 5). The equation of a line BC is  $y = x - 11$ . Is triangle ABC a right-angled triangle? Justify.
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- 5) (-9, -6) and (-5, -10) are the endpoints of a chord EF. (-5, -10) and (-1, -6) are the endpoints of a chord GH. Are the chords parallel or perpendicular? Justify.
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