Name : _____

Parallel and Perpendicular Lines

Sheet 5

1) The coordinates of A and B are (1, 3) and (5, 7) respectively. Equation of a line CD is y = –x + 12. Prove that the lines AB and CD are perpendicular.

2) P(5, 7) is the center of a circle. Q(3, 5) and R(7, 5) are any points on the circle. Are the line segments PQ and PR perpendicular? Justify your answer.

3) A line KL passes th … N is y = 2x – 11. Is $\overleftrightarrow{KL}$ parallel to $\overleftrightarrow{MN}$?

4) Equation of a chor … -8, –9) and (3, 2). Prove that the chc …

5) The endpoints of a line segment DE are (–8, 7) and (–6, 3). The equation of a line EF is y = 2x – 11. Is triangle DEF a right triangle? Justify your answer.

Name : _____

Answer Key

Sheet 5

Parallel and Perpendicular Lines

1) The coordinates of A and B are (1, 3) and (5, 7) respectively. Equation of a line CD is y = –x + 12. Prove that the lines AB and CD are perpendicular.

slope of $\overleftrightarrow{AB}$ = 1 ; slope of $\overleftrightarrow{CD}$ = –1

slope of $\overleftrightarrow{AB}$ × slope of $\overleftrightarrow{CD}$ = –1

The lines AB and CD are perpendicular.

2) P(5, 7) is the center of a circle. Q(3, 5) and R(7, 5) are any points on the circle. Are the line segments PQ and PR perpendicular? Justify your answer.

slope of $\overline{PQ}$ = 1

slope of $\overline{PQ}$ × s

Yes. Product of

ts PQ and PR are perpendicular.

3) A line KL passes th

N is y = 2x – 11.

Is $\overleftrightarrow{KL}$ parallel to $\overleftrightarrow{MN}$

slope of $\overleftrightarrow{KL}$ = 2

slope of $\overleftrightarrow{KL}$ = s

The lines KL ar

4) Equation of a chor

-8, –9) and (3, 2).

Prove that the chc

slope of y = x –

slope of chord

As the slopes are equal, the chords are parallel.

5) The endpoints of a line segment DE are (–8, 7) and (–6, 3). The equation of a line EF is y = 2x – 11. Is triangle DEF a right triangle? Justify your answer.

slope of $\overline{DE}$ = –2 ; slope of $\overline{EF}$ = 2

slope of $\overline{DE}$ × slope of $\overline{EF}$ = –4 ≠ –1

No. Product of their slopes are not equal to –1, the triangle DEF is not a right triangle.