Name : _____

Parallel and Perpendicular Lines

1) Equation of a line *m* is y = 3x + 5. Slope of a line *n* is 3. Prove that the lines are parallel.

2) Equation of $\overleftrightarrow{AB}$ is 5y −15x = −20. Equation of $\overleftrightarrow{CD}$ is $y = -\frac{1}{3}x + 15$. Prove that $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$.

3) Equation of the lir ...e lines parallel or perpendicular? Ju...

4) Equation of line *p* ...rove that the lines are perpendicular...

5) Equation of two lines are y + 6x = −3 and 18y = 3x + 13. Are the lines parallel? Justify your answer.

Name : _____

Answer Key

Parallel and Perpendicular Lines

Sheet 1

1) Equation of a line *m* is y = 3x + 5. Slope of a line *n* is 3. Prove that the lines are parallel.

slope of *m* = 3 ; slope of *n* = 3

slope of *m* = slope of *n*

The lines *m* and *n* are parallel.

2) Equation of $\overleftrightarrow{AB}$ is 5y −15x = −20. Equation of $\overleftrightarrow{CD}$ is $y = -\frac{1}{3}x + 15$. Prove that $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$.

slope of $\overleftrightarrow{AB}$ =

slope of $\overleftrightarrow{AB}$ ×

$\overleftrightarrow{AB}$ is perpend

3) Equation of the lir ne lines parallel or perpendicular? Ju

slope of 3y +

slope of y = –

As the slopes

4) Equation of line *p* rove that the lines are perpendicular.

slope of *p* = 1

slope of *p* × s

The lines *p* and *q* are perpendicular.

5) Equation of two lines are y + 6x = −3 and 18y = 3x + 13. Are the lines parallel? Justify your answer.

slope of y + 6x = –3 is –6

slope of 3y = –18x + 13 is $\frac{1}{6}$

No. As the slopes are not equal, the lines are not parallel.