

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

## Parallel or Perpendicular Lines

Sheet 2

- 1)  $\overleftrightarrow{KL}$  passes through (9, 7) and (10, 1).  $\overleftrightarrow{MN}$  passes through (4, 4) and (10, 5). Are the lines parallel or perpendicular? Justify.

\_\_\_\_\_

- 2) A line passes through (-7, 1) and (-2, 6). Another line passes through (-5, -1) and (0, 4). Prove that the lines are parallel.

\_\_\_\_\_

- 3) Slope of a line  $m$  is \_\_\_\_\_). Are the lines  $m$  and  $n$  parallel or perpendicular?

\_\_\_\_\_

- 4) A line  $g$  passes through \_\_\_\_\_). Is line  $g$  parallel to line  $h$ ?

\_\_\_\_\_

- 5) A line passes through  $S(-9, 4)$  and  $T(-4, 3)$ . Another line passes through  $U(7, -8)$  and  $V(10, 7)$ . Prove that  $\overleftrightarrow{ST}$  and  $\overleftrightarrow{UV}$  are perpendicular.

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**Parallel or Perpendicular Lines**

- 1)  $\overleftrightarrow{KL}$  passes through (9, 7) and (10, 1).  $\overleftrightarrow{MN}$  passes through (4, 4) and (10, 5). Are the lines parallel or perpendicular? Justify.

$$\text{slope of } \overleftrightarrow{KL} = -6 ; \text{ slope of } \overleftrightarrow{MN} = \frac{1}{6}$$

$$\text{slope of } \overleftrightarrow{KL} \times \text{slope of } \overleftrightarrow{MN} = -1$$

**The lines are perpendicular.**

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- 2) A line passes through (-7, 1) and (-2, 6). Another line passes through (-5, -1) and (0, 4). Prove that the lines are parallel.

**Slope of a line**

**Slope of a line**

**As the slopes a**

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- 3) Slope of a line  $m$  is \_\_\_\_\_). Are the lines  $m$  and  $n$  parallel or perpendicular?

$$\text{slope of } m = -3$$

$$\text{slope of } m \times \text{slope of } n =$$

**Product of the**

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- 4) A line  $g$  passes through \_\_\_\_\_ Is line  $g$  parallel to line  $h$ ?

$$\text{slope of } g = \frac{3}{4}$$

$$\text{slope of } g \neq \text{slope of } h$$

**No, line  $g$  is not parallel to line  $h$ .**

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- 5) A line passes through S(-9, 4) and T(-4, 3). Another line passes through U(7, -8) and V(10, 7). Prove that  $\overleftrightarrow{ST}$  and  $\overleftrightarrow{UV}$  are perpendicular.

$$\text{slope of } \overleftrightarrow{ST} = -\frac{1}{5} ; \text{ slope of } \overleftrightarrow{UV} = 5$$

$$\text{slope of } \overleftrightarrow{ST} \times \text{slope of } \overleftrightarrow{UV} = -1$$

**$\overleftrightarrow{ST}$  and  $\overleftrightarrow{UV}$  are perpendicular.**

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