

Find the slope of the straight line that passes through the given points or state that the slope is undefined. Then indicate if the line through the points rises (left to right), falls (left to right), is horizontal, or is vertical.

1. (7,4) and (1,1)
2. (-3,4) and (2,-1)
3. (-5,3) and (-5,2)

Solution:

Slope

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

1. $m = \frac{1-4}{1-7} = \frac{3}{6} = \frac{1}{2}$
points rises (left to right)

$m = \frac{1}{2} > 0 \Rightarrow$ the line through the

2. $m = \frac{-1-4}{2-(-3)} = \frac{-5}{5} = -1$
points falls (left to right)

$m = -1 < 0 \Rightarrow$ the line through the

3. $m = \frac{2-3}{-5-(-5)} = \frac{-1}{0} \rightarrow \infty$

$m \rightarrow \infty \Rightarrow$ the line is vertical.