

8.1) Slope

May 3, 2016

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#1. Slope is 2. ¹(3, 4) ²(4, k)

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

$$2 = \frac{k - 4}{4 - 3}$$

$$2 = \frac{k - 4}{\cancel{1}}$$

$$6 = k$$

#2. Slope is $-\frac{3}{4}$ ¹(-6, 8) and ²(2, k)

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

$$-\frac{3}{4} = \frac{k - 8}{2 + 6}$$

$$\frac{-3}{4} = \frac{(k - 8)}{8}$$

$$-24 = 4(k - 8)$$

$$\overset{+32}{-24} = 4k \overset{+32}{-32}$$

$$\frac{8}{4} = \frac{4k}{4} \quad \boxed{k = 2}$$

$$\#3 \quad \frac{2}{3} = \frac{9 - 5}{10 - k}$$

$$\frac{2}{3} = \frac{4}{10 - k}$$

$$2(10 - k) = 12$$

$$\overset{-20}{20} - 2k = \overset{-20}{12}$$

$$\frac{-2k}{-2} = \frac{-8}{-2}$$

$$k = 4$$

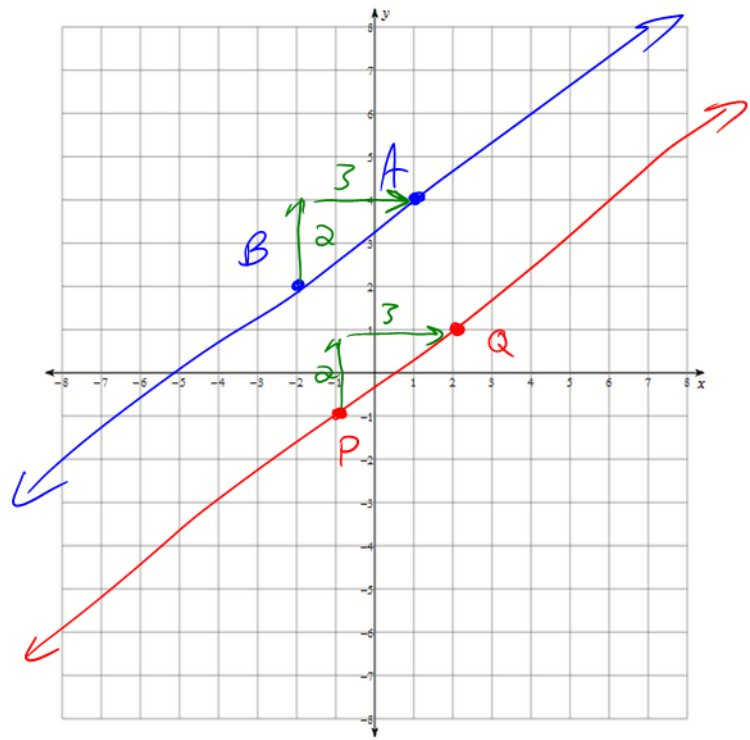
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49.

$$m_{AB} = \frac{2}{3} \quad m_{PQ} = \frac{2}{3}$$

Parallel lines have the
same slope.

Know this!!

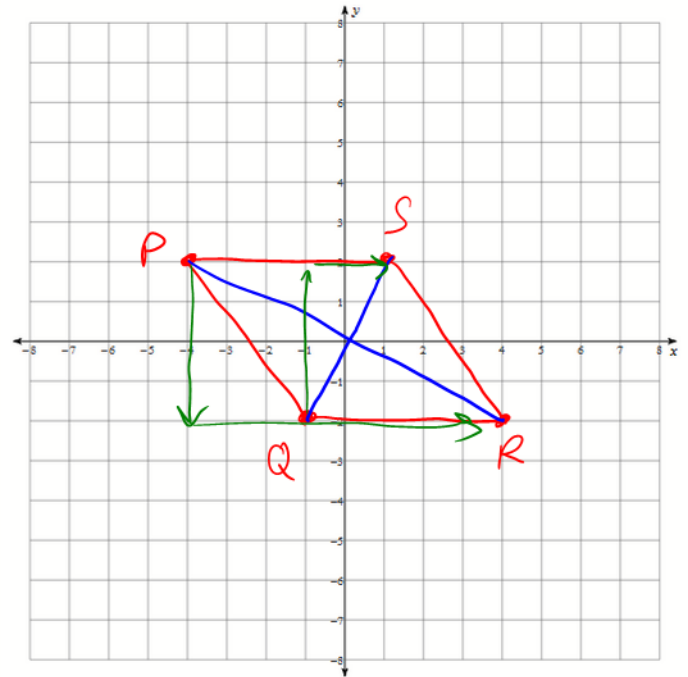


50.

$$m_{QS} = \frac{4}{2} = \frac{2}{1}$$

$$m_{PR} = \frac{-4}{8} = -\frac{1}{2}$$

Perpendicular means they
meet at 90°



Perpendicular slopes are the negative reciprocal
of each other ex: $m = \frac{3}{5}$ $m = -\frac{5}{3}$ is the neg recip....

8.2) Slope as a Rate of Change

pg 407 This finds the average rate of change.

0 months

1. Birth is 7m long. $(0, 7)$ Time is X
7 months is 15 m long. $(7, 15)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{15 - 7}{7 - 0} = \frac{8}{7} \text{ meaning, 8 metres in 7 months}$$
$$= 1.14 \text{ metres per month.}$$

4. $(1, 10)$ $(2, 20)$

$$m = \frac{20 - 10}{2 - 1} = \frac{10}{1} \text{ or 10 metres per second}$$

or 10 m/s

7. 1971, there were 323000 students $(1971, 323000)$
1997, there were 544000 students. $(1997, 544000)$

$$m = \frac{544000 - 323000}{1997 - 1971} = \frac{221000}{26} = 8500 \text{ students per year.}$$

Homework: pg 407 # 2, 3, 5, 6, 8, 13

Don't Forget to include units

a little tricky.

