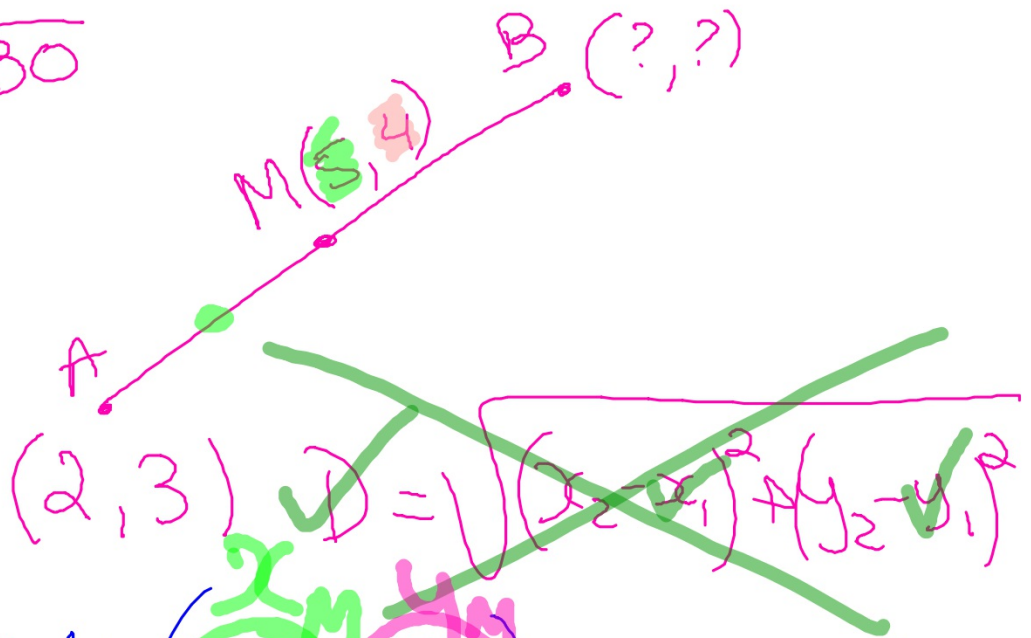


Review concepts on coordinate geometry
and gradients

Comments on homework

$$AB = \sqrt{30}$$



$$B(8, 5)$$

$$M \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$$

$$\begin{aligned} 5 &= \frac{x_B + 2}{2} \\ 10 &= x_B + 2 \\ \boxed{x_B = 8} \\ \Rightarrow 4 &= \frac{y_B + 3}{2} \Rightarrow \boxed{y_B = 5} \end{aligned}$$

$$C(2, -10)$$

1st

$$m_{AB} = -5$$

2nd

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

$$-5 = \frac{q}{2}$$

$$\boxed{-10 = q}$$

$$-5 = \frac{q+5}{2-1}$$

$$-5 = q+5$$

$$\boxed{q = -10}$$

#3 page 91 $P(-1, 5)$ $Q(a, 10)$
 x_1, y_1 x_2, y_2

a

$$m_{PQ} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{10 - 5}{a + 1}$$

$$\boxed{\frac{5}{a+1}}$$

$4(a+1) = 5$ ← b

$$4 = \frac{5}{(a+1)} \quad \boxed{a = \frac{1}{4}}$$

$$4a + 4 = 5$$

#4



$$M = \begin{pmatrix} x_1 & y_1 \\ 2 & 6 \end{pmatrix}$$
$$N = \begin{pmatrix} x_2 & y_2 \\ -3 & 1 \end{pmatrix}$$

(b) $\frac{t-6}{-3-2}$

$$\frac{t-6}{-5}$$

(c) $\frac{1}{2} = \frac{t-6}{-5}$
 $-5 = 2(t-6)$
 $-5 = 2t - 12$
 $7 = 2t$
 $t = \frac{7}{2}$

(a) 5

(b) $-\frac{1}{8}$

(c) $\frac{5}{4}$

(d) -2

(e) 0

FAST! FAST!!

Give me the gradient
of _____

$$\frac{3}{-11} \text{ or } \frac{-3}{11} \text{ or } -\frac{3}{11}$$

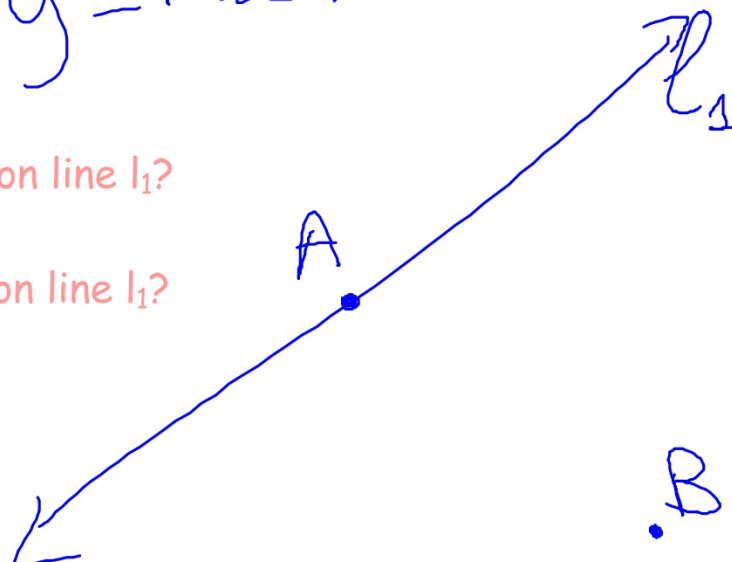
more elegant more practical

When manipulating -ve fractions, rewrite them with the -ve sign on the numerator.

$$y = mx + b$$

Is point A on line l_1 ?

Is point B on line l_1 ?



Same question:
Is point A on l_1 ?
Is point B on l_1 ?

$$l_1 \Rightarrow y = 2x + 1$$

$$A(2, 5) \checkmark$$

$$B(1, -10) \times$$

$$y = 2x + b$$