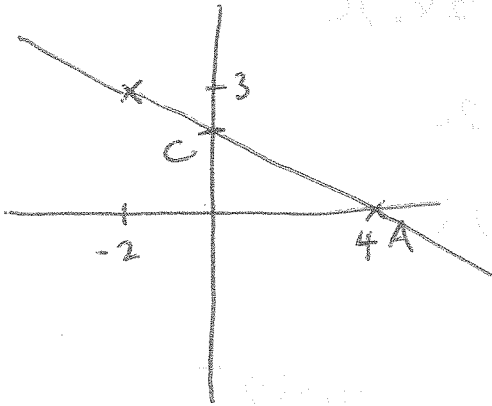


M4 = 25 days to go!

- 9 (a) Find the equation of the line L , which passes through the points $A(4, 0)$ and $B(-2, 3)$.

Draw a sketch



Negative gradient

$$m = \frac{\text{rise}}{\text{run}} = -\frac{3}{6} = -\frac{1}{2}$$

$$y = mx + c$$

$$y = \left(-\frac{1}{2}\right)x + c$$

$$0 = \left(-\frac{1}{2}\right)(4) + c \quad \text{Answer } \underline{y = -\frac{1}{2}x + 2} \quad [3]$$

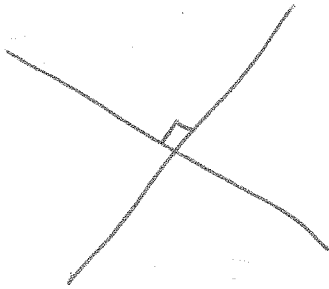
$$2 = c$$

- (b) Find the equation of the line which is perpendicular to L and passes through the origin.

perpendicular

$$m_1 \times m_2 = -1$$

product of perp. gradients = -1



Gradient of line is 2

$$\text{Answer } \underline{y = 2x} \quad [1]$$

But it passes through origin

$$y = 2x + 0$$

- 2 Bob was given a 3.5% pay rise.
His salary is now £25378.20
What was his salary before the rise?

"before" keyword

$$? + 3.5\% = 25378.20$$

$$103.5\% = 25378.20$$

$$1\% = 245.20$$

$$100\% = 24520$$

Answer 24520

- 11 A zoologist is trying to count the number of geese at a local nature reserve. She catches 64 geese and attaches tags to their legs. The next week she catches 80 geese and finds that 7 of them are tagged.

- (a) Calculate her estimate of the number of geese on the reserve.

$$\frac{64}{\text{all of them}} = \frac{7}{80}$$

7 out of 80

64 out of all

Answer 731 [2]

- (b) Give two improvements to her method which would make her estimate more accurate.

1. Repeat the experiment [1]
2. Collect a bigger amount and tag them [1]

- (c) Name one factor which would affect her estimate and which she cannot control.

Some geese may escape or die [1]