

## The NCETM Podcast

[An audience with the exam boards: the new A level and GCSE 9-1](#)

Exam questions referred to by the speakers in the podcast

### OCR Paper 3 Foundation Q15

Neil mentions this question at 34:57 and again at 45:30

15 (a) 50 sweets weigh 200 g.

If each sweet weighs the same, work out the weight of 7 sweets.

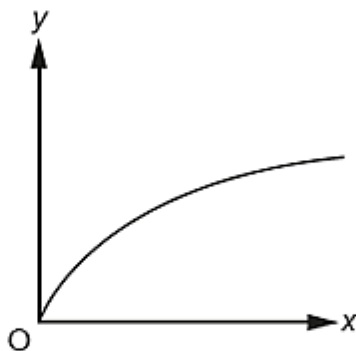
(a) ..... g [2]

(b)  $b$  is directly proportional to  $a$ .  
 $b$  is 10 when  $a$  is 8.

Work out  $b$  when  $a$  is 9.

(b)  $b =$  ..... [2]

(c) A graph is drawn below.



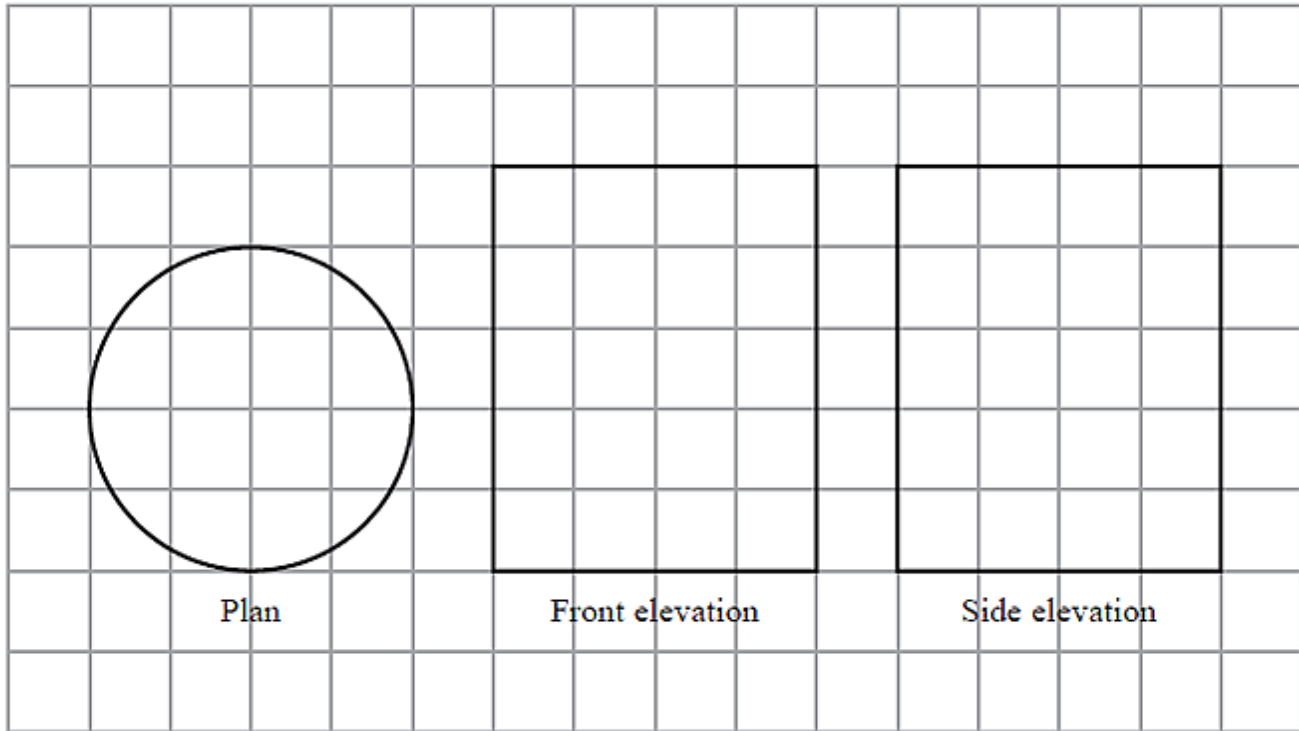
Explain how you know that  $y$  is not directly proportional to  $x$ .

.....  
..... [1]

(2 marks) Edexcel Paper 1 (non-calc), Foundation Q25, Higher Q4

Graham mentions this question at 39:02

- 25 The diagram shows the plan, front elevation and side elevation of a solid shape, drawn on a centimetre grid.

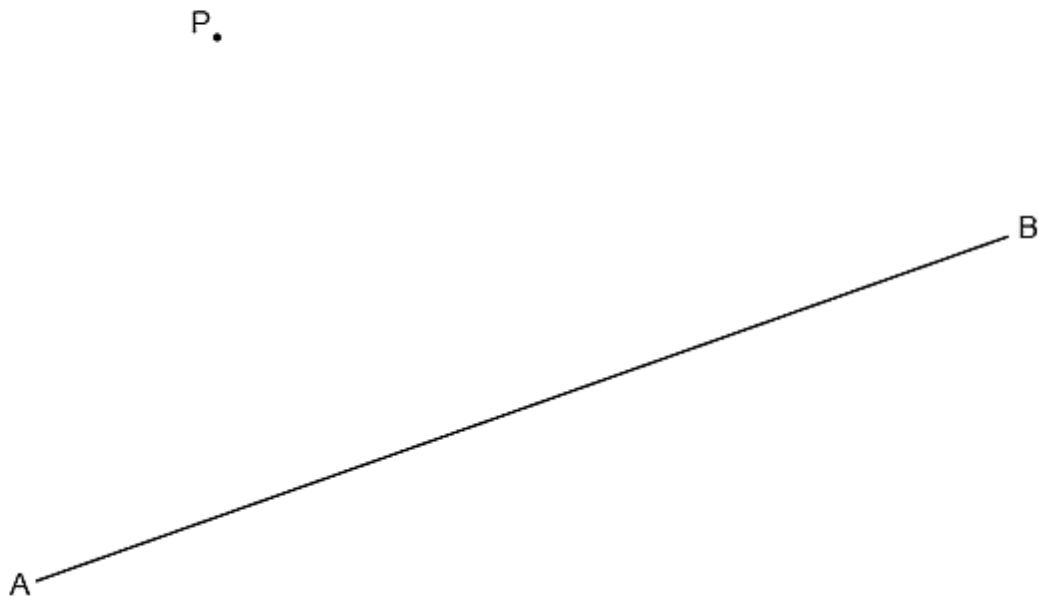


In the space below, draw a sketch of the solid shape.  
Give the dimensions of the solid on your sketch.

OCR Paper 3 (Foundation) Q22, Paper 6 (Higher) Q7

Neil mentions this question at 42:20

- 22 Construct the perpendicular from the point P to the line AB.  
Show all of your construction lines.



[2]

(4 marks) Edexcel Paper 1 (non-calc) Higher Q20

Graham mentions this question at 43:21

- 20  $h$  is inversely proportional to  $p$   
 $p$  is directly proportional to  $\sqrt{t}$   
Given that  $h = 10$  and  $t = 144$  when  $p = 6$   
find a formula for  $h$  in terms of  $t$

**Edexcel Paper 2 Foundation Q25, Higher Q6**

*Graham mentions this question at 43:56*

**25** Sally used her calculator to work out the value of a number  $y$ .

The answer on her calculator display began

8.3

Complete the error interval for  $y$ .

.....  $\leq y <$  .....

**(Total for Question 25 is 2 marks)**

**(4 marks) OCR Paper 3 (Foundation) Q13**

*Neil mentions this question at 45:44*

**13** Delroy drives 240 miles.  
His car averages 40 miles per gallon of petrol.  
Petrol costs £1.30 per litre.

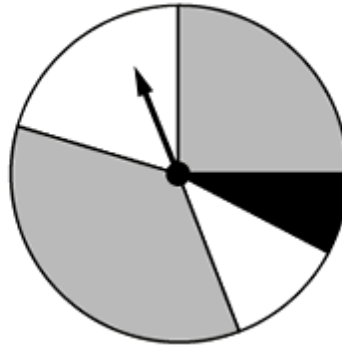
1 gallon is 4.5 litres.

How much does Delroy spend on petrol for this journey?

OCR Paper 6 (Higher) Q3

Neil mentions this question at 46:01 (see also (b) on the next page)

- 3 (a) This spinner has two grey sections, two white sections and one black section.



Vlad says

The probability of the spinner landing on black is  $\frac{1}{5}$ .

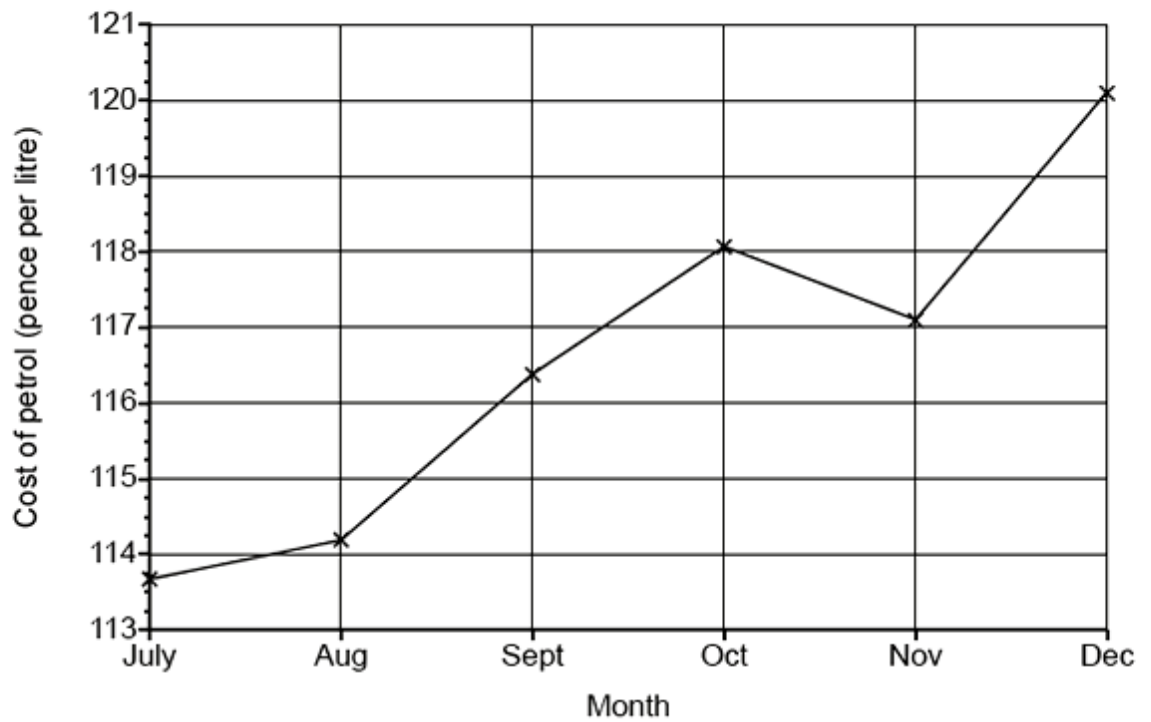
Explain why Vlad is not correct.

.....

.....

..... [1]

(b) The graph shows the cost of a litre of petrol for the last six months of 2017.



Explain why this graph is misleading.

.....

.....

..... [1]

**OCR Paper 6 (Higher) Q22**

*Neil mentions this question at 47:07*

- 22** At the start of 2018, the population of a town was 17 150.  
At the start of 2019, the population of the town was 16 807.

It is assumed that the population of the town is given by the formula

$$P = ar^t$$

where  $P$  is the population of the town  $t$  years after the start of 2018.

- (a) Write down the value of  $a$ .

(a) ..... [1]

- (b) Show that  $r = 0.98$ .

[1]

- (c) Show that the population is predicted to be less than 16 000 at the start of 2022.

[2]

- (d) Use the formula to work out what the population might have been at the start of 2017.

(d) ..... [2]

**AQA Paper 3 (Foundation) Q17b**

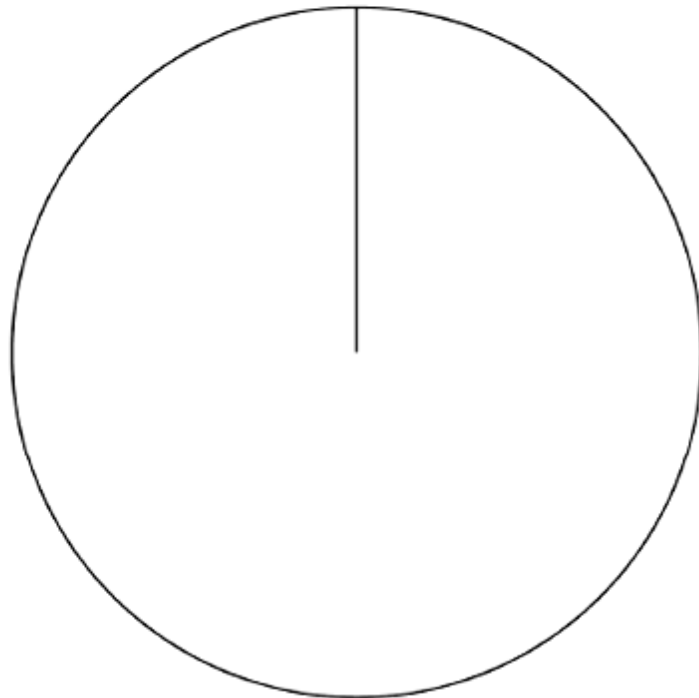
*Andrew mentions this question at 44:34*

- 17 (b)** In one hour the shop sells 180 scoops of ice cream.  
The number of scoops of each flavour is shown in the table.

<b>Flavour</b>	Vanilla	Strawberry	Chocolate	Mint
<b>Number of scoops</b>	45	75	50	10

Complete the pie chart to represent the data.

**[4 marks]**



**AQA Paper 3 (Foundation) Q14**

*Andrew mentions this question at 44:51*

- 14** In this question use  
1 cubic foot = 6.23 gallons  
1 cubic foot = 0.028 cubic metres

Convert 3115 gallons into cubic metres.

**[3 marks]**