FFX 5-6 Maths Revision Material

Name: **Class:** **Date:**

A Number and the number system

1. (a) Write $\frac{1}{15}$ as an exact decimal

.....1 mark (L8/1)

(b) Write 0.4666666666666..... as a fraction

.....1 mark (L8/1)

B Calculating

2. (a) A bouncy ball is dropped from a height of 256metres.
Each bounce is 25% less than its previous height.
What is the height after 5 bounces?

---------- 1 mark (L8/2)

(b) After a 20% rise, Meg will have a new wage of £264 per week.
What was Meg's wage before her wage increase?

---------- 1 mark (L8/2)

3. (a) (i) Express 0.00000561 in standard form

..... 1 mark (L8/3)

(ii) Express 9.3×10^7 as an ordinary number

..... 1 mark (L8/3)

(b) Work out $(8 \times 10)^{-5} \times (3 \times 10^7)$
Show your working out ***(Answer in standard form)***

..... 1 mark (L8/3)

C **Algebra**

4. Factorise the following expressions:

(a) $2x^2 + 7x + 5$

---------- 1mark (L8/4)

(b) $x^2 - 169$

---------- 1mark (L8/4)

5. Expand the following :

(a) $(3x - 5)^2$

.....1 mark (L8/5)

(b) $(a - b)^2$

.....1 mark (L8/5)

(c) Solve: $\frac{5(3y - 4)}{2y} = 7$

y = ... 2 marks (L8/5)

6. Make x the subject of this formula:

Show each stage of your working out.

$px + a = qx + b$

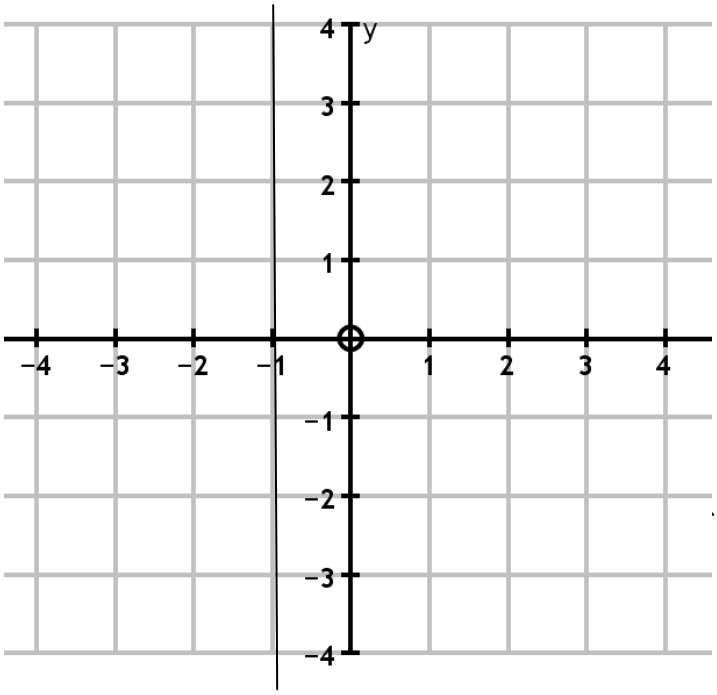
x = ... 1 mark (L8/6)

7. Find the value of $F = \frac{9C}{5} + 32$ when C = -20

F = ... 1 mark (L8/7)

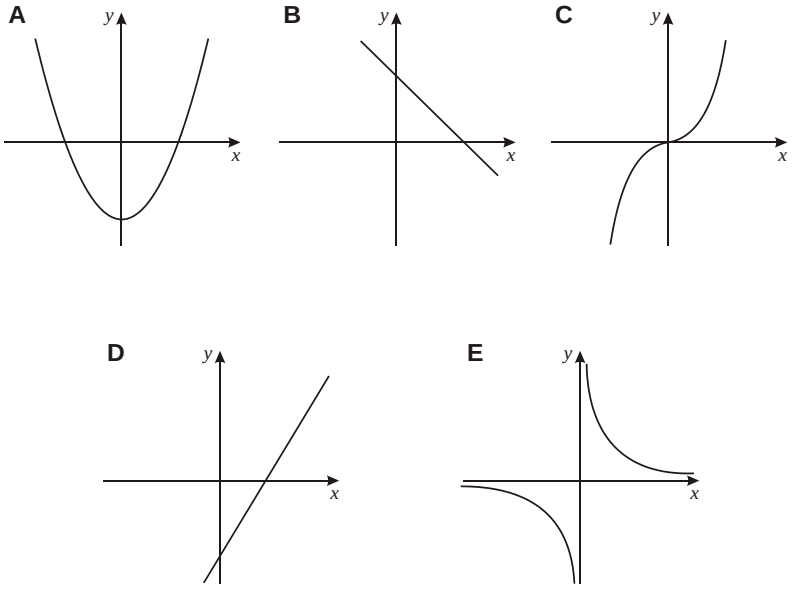
8. Show by shading, the region where:

$y \leq 4$, $y \geq \frac{1}{2}x + 2$ and $x \geq -1$



2 marks (L8/8)

9. Match each graph to the correct equation.



Graph ..... shows the equation $y = \frac{10}{x}$

Graph ..... shows the equation $y = \frac{1}{2}x^3$

Graph ..... shows the equation $y = 3 - 2x$

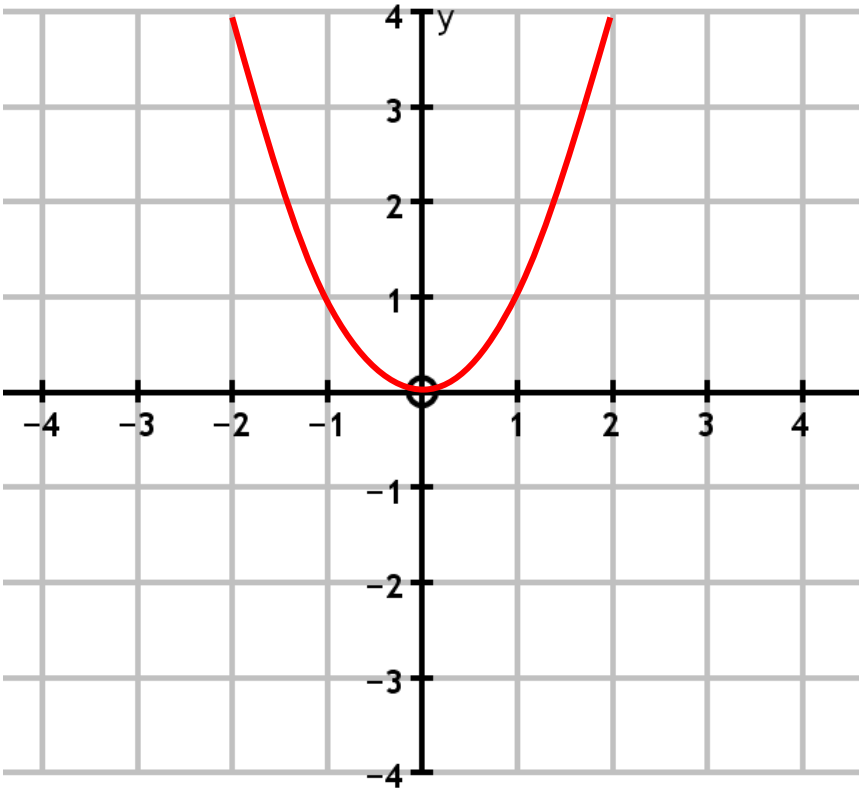
Graph ..... shows the equation $y = \frac{x^2}{2}$

Graph ..... shows the equation $y = 5x - 3$

2 marks (L8/9)

10. The diagram shows the graph of $y = x^2$.

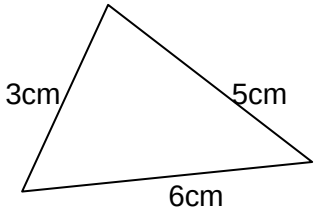
On the same axes sketch the graph of $y = 2x^2 - 3$

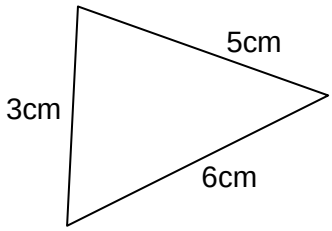


2 marks (L8/10)

D **Shape, Space and Measure**

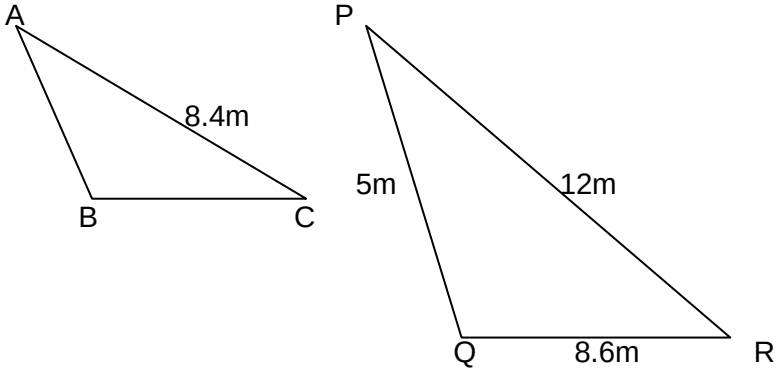
11. (a) Are the triangles congruent?
Explain your answer





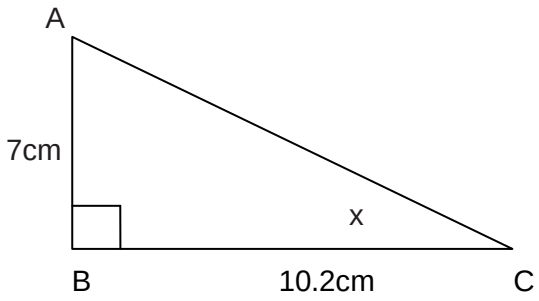
..... 1 mark (L8/11)

(b) The triangles ABC and PQR are similar.
Work out the size of the sides AB and BC



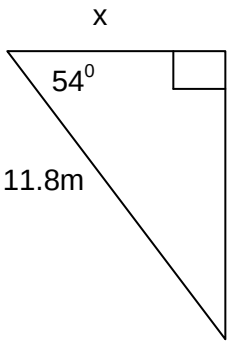
AB = ...cm 1mark (L8/11)
BC = ...cm 1mark (L8/11)

12. (a) Work out the value of *x*.
Give your answer correct to 3s.f.



x =.....^{0} 2 marks (L8/12)

(b) Calculate the length x.
Give your answer correct to 2d.p..



x = ...m 2 marks (L8/12)

13. Here are some expressions.
Say whether each represents a length, an area or a volume
Letters represent lengths and π represents a number

$3xy + 5y^2$	
$5abc + 3a^2b$	
$b + 2h$	
$x(x + 2y)$	
$\frac{4}{3}\pi r^3$	
$4a^2$	

2 marks (L8/13)

E **Data Handling**

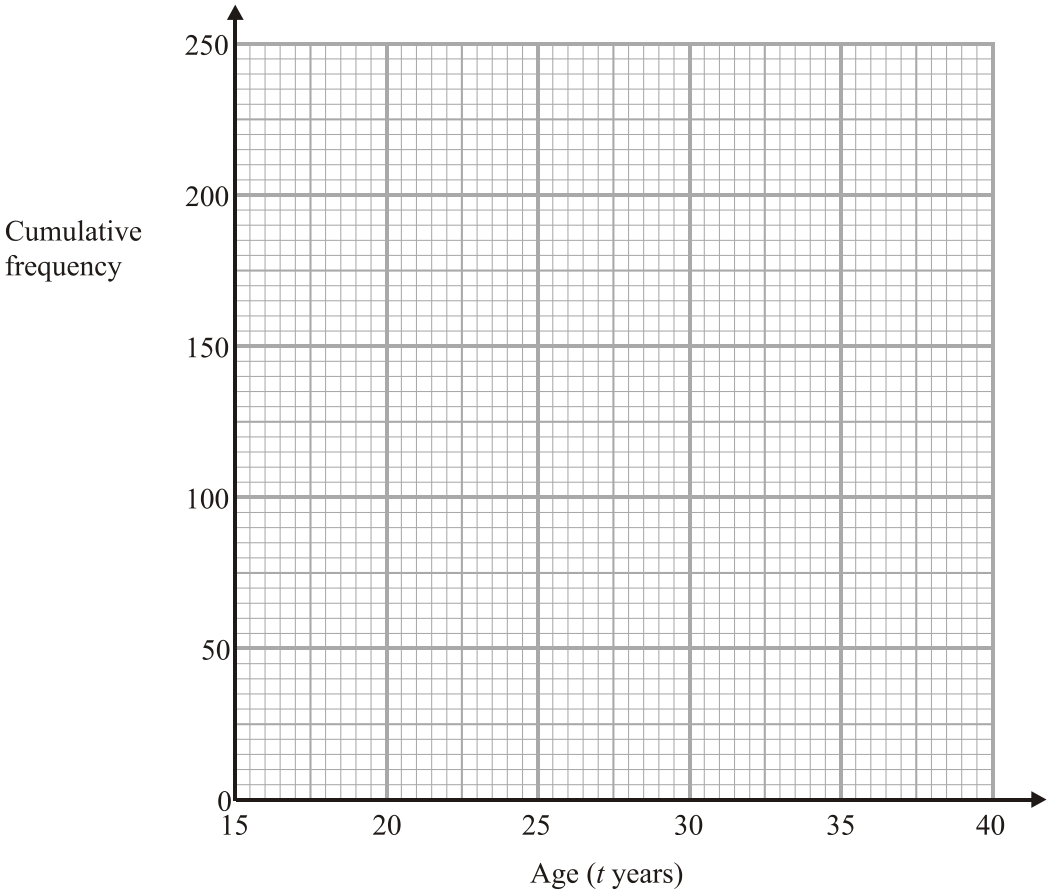
14. The table shows information about the ages of the 240 people at a club.

Age (t years)	Frequency
$15 \le t < 20$	95
$20 \le t < 25$	90
$25 \le t < 30$	35
$30 \le t < 35$	15
$35 \le t < 40$	5

Age (t years)	Cumulative frequency
$15 \le t < 20$	
$15 \le t < 25$	
$15 \le t < 30$	
$15 \le t < 35$	
$15 \le t < 40$	

(a) Complete the cumulative frequency table. 1mark (L8/14)

(b) On the grid, draw the cumulative frequency graph for your table. 1mark (L8/14)



(c) Use your graph to find an estimate for the median age of the people.

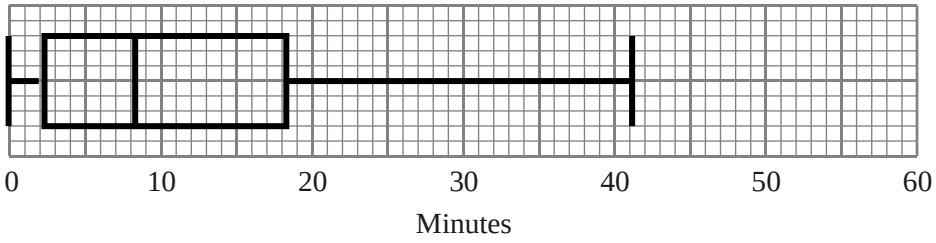
..... years 1mark (L8/14)

(d) Use your graph to find an estimate for the interquartile range of the age of the people

..... years 2mark (L8/14)

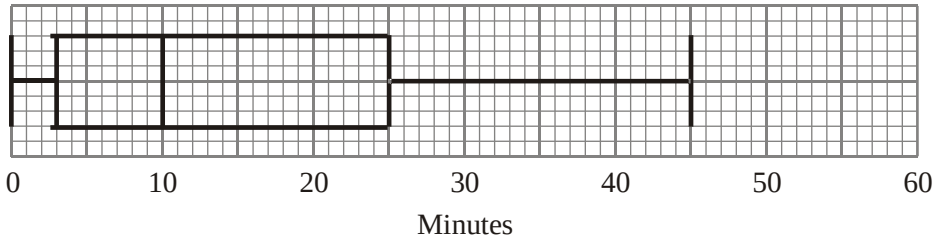
15. On Friday, Peter went to the airport.
He recorded the number of minutes that each plane was delayed.
Here are the results recorded on a box plot

On the grid, draw a box plot to show the information in the table.



Peter also went to the airport on Saturday.
He recorded the number of minutes that each plane was delayed.

The box plot below was drawn using this information.



Make a comparison between the distributions of plane delays on Friday and on Saturday.

.....

.....

1 mark (L8/15)

16 (a) Jo takes a driving test
The probability that Jo passes the written part of the test is 0.8
The probability that Jo passes the driving part of the test is 0.6
What is the probability that Jo passes both parts of the driving test?

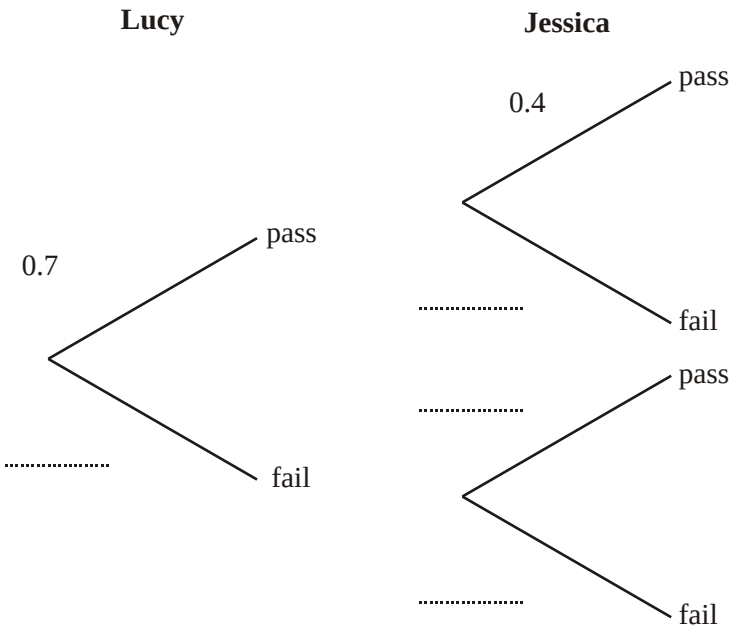
..... 1mark (L8/16)

(b) In a box there are dark, milk and white chocolates.
The probability of choosing at random a white chocolate is 0.3
The probability of choosing at random a dark chocolate is 0.25
What is the probability of choosing a white or a dark chocolate?

..... 1marks(L8/16)

17. Lucy and Jessica take a test.
The probability that Lucy will pass the test is 0.7
The probability that Jessica will pass the test is 0.4

(a) Complete the probability tree diagram. 2marks (L8/17)



(b) Work out the probability that only one of the 2 girls will pass the test.

.....1mark (L8/17)