FFX 4-5 Maths Revision Material

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

A Number and the number system

1. (a) One calculation below gives the answer to the question

What is 60 decreased by 32%?

Tick (✓) the correct one.

60 ×0.32	60 ×1.32	60 × 0.68

1 mark (L7/1)

(b) Choose one of the other calculations.
Write a question **about percentages** that this calculation represents.

calculation chosen: .....

question it represents: .....

1 mark (L7/1)

B Calculating

2. Last year there were 625 pupils on roll at a school.
This year the number of pupils has decreased by 12%.

To find the number of pupils this year, I can do this sum:

625 x ..... = ...

Fill in the multiplier and the number of pupils this year

1 mark (L7/2)

3. Work out:

(a)

$$1\frac{2}{5} \times \frac{2}{3}$$

.....1mark (L7/3)

(b)

$$1\frac{2}{5} \div \frac{2}{3}$$

.....1mark (L7/3)

4. Work out an **estimate** for the value of

$$\frac{41.4 \times 18.21}{0.18}$$

---------- 1mark (L7/4)

5. Use a calculator to work out: $\frac{34.2 \times 6.08}{2.45 \times 13.4}$

Write down all the figures on your calculator display.

..... 1 mark (L7/5)

C Algebra

6. Expand & simplify :

$(x - 4)^2$

x = ... 2 marks (L7/6)

7. Solve these simultaneous equations by an algebraic method:
Show all working out

$$5x + 6y = 9$$
$$x - 2y = 5$$

x = ...

y = ...

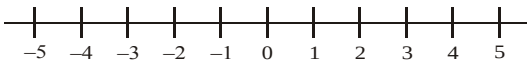
2 marks (L7/7)

8. (i) Solve the inequality

$$4x + 2 \leq 2(x + 3)$$

.....2 marks (L7/8)

(ii) On the number line, represent the solution set to part (i).



1 mark (L7/8)

9. Make q the subject of the formula P = 2q + 10.

q = ... 1 mark (L7/9)

10. Find the nth term of each of these sequences:

6, 9, 14, 21, 30, ...

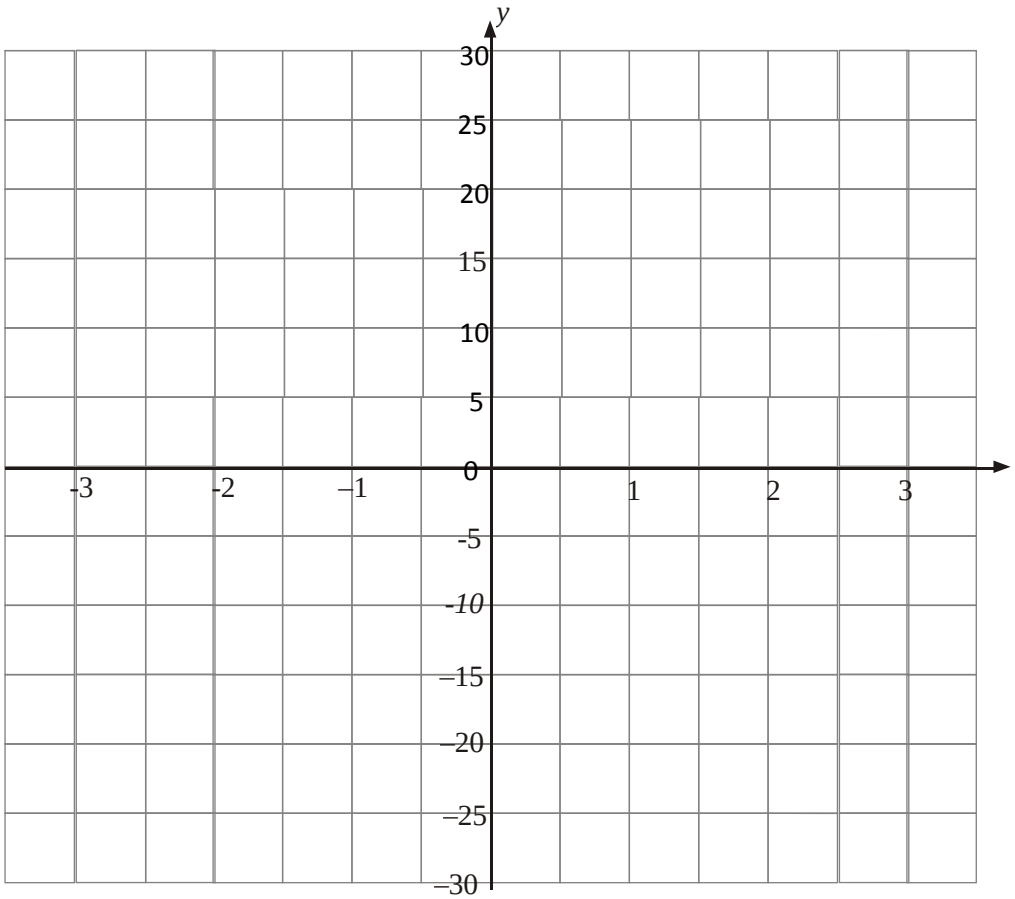
T(n) = _____ 2 marks (L7/10)

11. (a) Complete the table of values for $y = x^3 + x$

x	-3	-2	–1	0	1	2	3
y	-30	-10		0	2		30

1mark (L7/11)

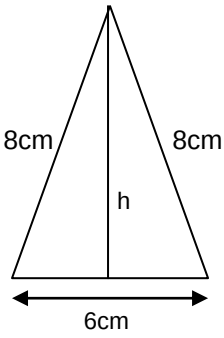
(b) On the grid, draw the graph of $y = x^3 + x$



2 marks (L7/11)

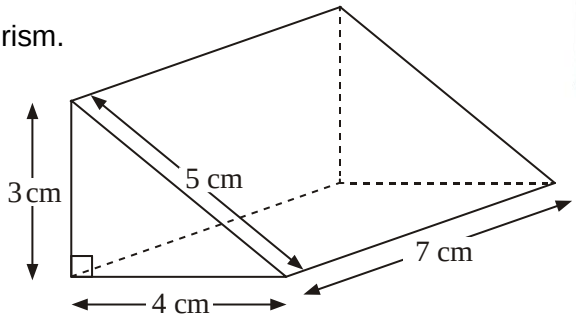
D **Shape, Space and**

12. Find the height of this isosceles triangle
(Give your answer correct to 1dp)



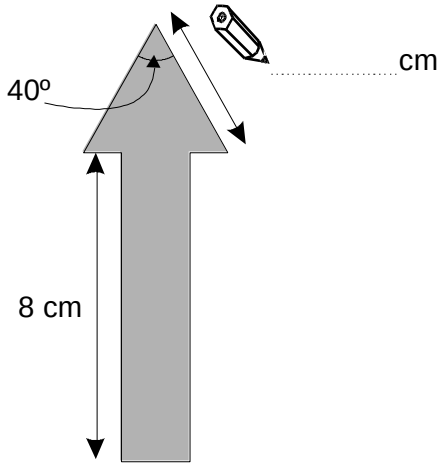
h =.....cm 2 marks (L7/12)

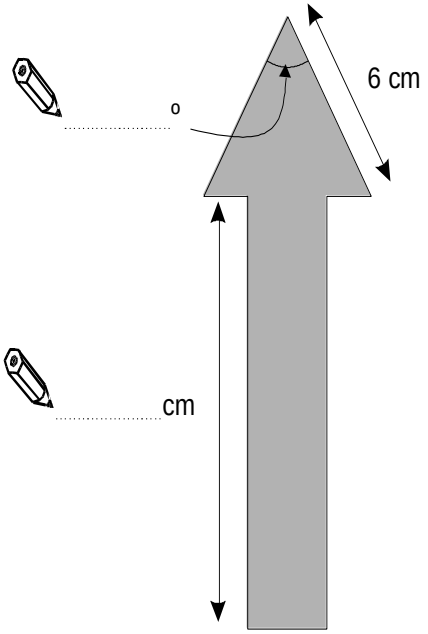
13. Work out the total surface area of the triangular prism.
Give the units with your answer.



.....2marks (L7/13)

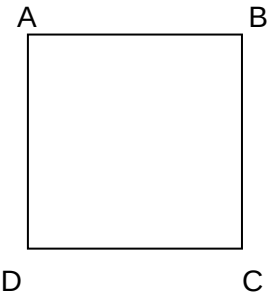
14. The sketch below shows two arrows.
The bigger arrow is an **enlargement** of **scale factor 1.5** of the smaller arrow.
Write down the **three** missing values.





3marks (L7/14)

15. ABCD is a square. Construct the locus of points equidistant from the sides AD and CD



1mark (L7/15)

16. The length of the room is 6m correct to the nearest m

(a) Write down the minimum length of the room.

..... m

(b) Write down the maximum length of the room.

.....m

2 marks (L7/16)

17. 480 grams of a cheese has a volume of 400 cm^3.
Work out the density of the cheese.

..... grams per cm^3

1 marks (L7/17)

E **<u>Data Handling</u>**

18. Billy is conducting a survey into pupils' attitudes towards the environment.
He decides to ask a series of questions to everyone in his class.

a) Explain why this is not the best way to get reliable results

.....

b) Describe a better way to select the pupils to ask

.....

c) Having selected the pupils he wants to ask, how can he ensure they all respond to the questionnaire in a reliable way?

.....

3 marks (L7/18)

19.

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Circle True or False

The frequency polygons show that:

- 'The midday temperatures of European capital cities had a greater range than the midday temperatures of Canadian cities on 1st September 2004.'

True / False

- 'More European cities than Canadian cities had temperatures of 20 degrees or more on 1 September 2004.'

True / False

- 'The highest temperature recorded was in a Canadian city on 1 Sept 2004. Not in a European capital.'

True / False

3marks(L7/19)

20. Fred did a survey on the areas of 150 pictures in a newspaper.
The table gives information about the areas.

Area (A cm^2)	Frequency
$0 < A \leq 10$	38
$10 < A \leq 25$	36
$25 < A \leq 40$	30
$40 < A \leq 60$	46

Work out:

(a) the modal class interval

.....cm^2 1mark(L7/20)

(b) the estimate for the mean area of pictures.

.....cm^2 2marks(L7/20)

21. These are the amount of goals scored by 2 basketball teams in one season

TEAM A: 13, 17, 13, 9, 17, 12, 2, 19, 3

TEAM B: 15, 19, 11, 19, 7, 12, 12, 9, 7

Which Team do you think is best?

Explain your decision using mean and range:

Team A: Range ……. Team A: Mean ……

Team B: Range ……. Team B: Mean ……

1 mark (L7/21) 1 mark (L7/21)

TEAM ……. Because …….....

……..

1mark (L7/21)

22. Siobhan rolls a dice 50 times and records the number of times she obtains each number.
She gets 21 sixes.
Do you think the dice is fair?

.....

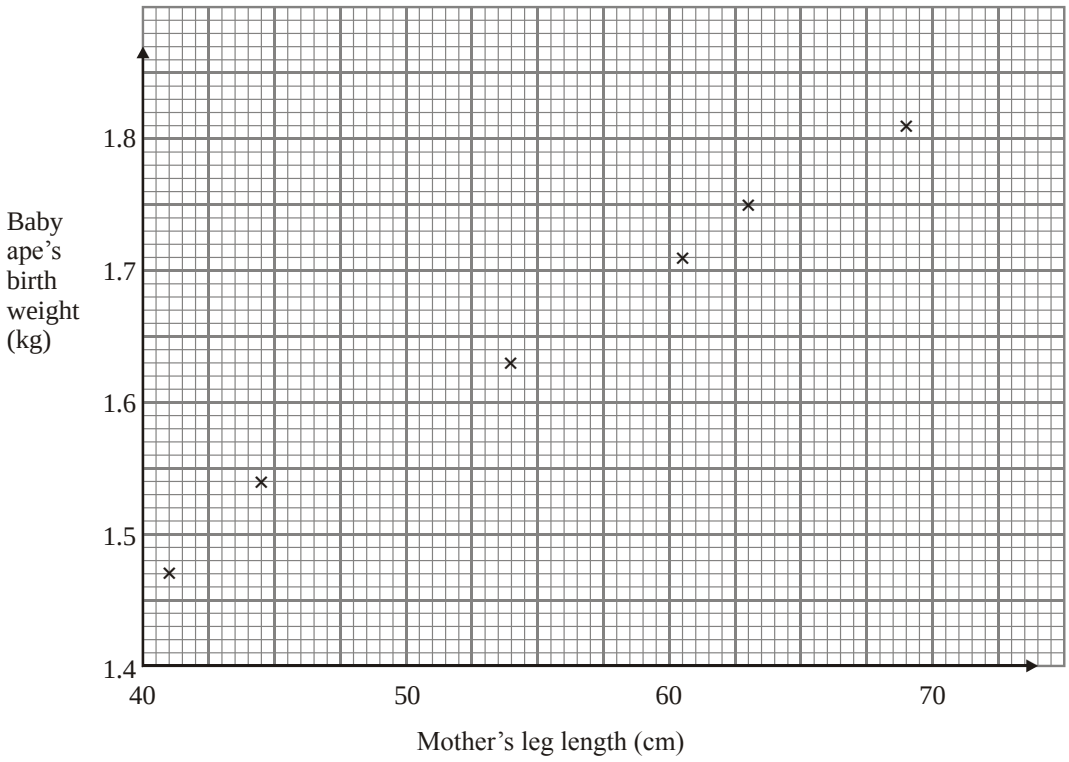
Explain your answer.

.....

.....

.....1 mark (L7/22)

23. The scatter graph shows some information about the birth weight and mother's leg length of six new-born baby apes.



The table shows the mother's leg length and the birth weight of two more baby apes.

Mother's leg length (cm)	50	65
Baby ape's birth weight (kg)	1.6	1.75

(a) On the scatter graph, plot the information from the table 1marks (L7/23)

(b) Describe the **correlation** between a mother's leg length and her baby ape's birth weight.

…… 1marks (L7/23)

A mother's leg length is 55 cm.

(c) Use your line of best fit to estimate the birth weight of her baby ape.

……kg

1marks (L7/23)