

Holyhead High School Ysgol Uwchradd Caergybi

Mathematics Department Homework Pack

Year 9 Module 10 Foundation

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Name

Class Teacher

Name

Algebra

$$\frac{\dots}{25} \times 100 = \dots\%$$

1. Simplify

a. $4a + 5a + 2a$

b. $2a + 4a + 6b + 3b$

b. $7a - 3a + 8b + b$

c. $8a + 4b + 5a - 2b$ [7]

2. Guess my number

[5]

a. I'm thinking of a number and **add 6** to it to get 22

b. I'm thinking of a number and **subtract 11** to it to get 30

c. I'm thinking of a number and **multiply 6** to it to get 15

d. I'm thinking of a number and **divide by 3** to it to get 4

3. Solve the following. You must show full workings out.

[8]

a. $x + 7 = 18$

.....

.....

b. $x - 13 = 41$

.....

.....

c. $x + 9 = 2$

.....

.....

d. $x - 11 = -5$

.....

.....

e. $3x = 27$

.....

.....

f. $4x = 14$

.....

.....

g. $\frac{x}{5} = 6$

.....

.....

h. $\frac{x}{3} = 7$

.....

.....

4. Expand the following

a. $3(x + 4)$ [2]

.....

b. $5(x - 7)$ [2]

.....

c. $3(2x + 3) + 4(x + 2)$ [2]

Name

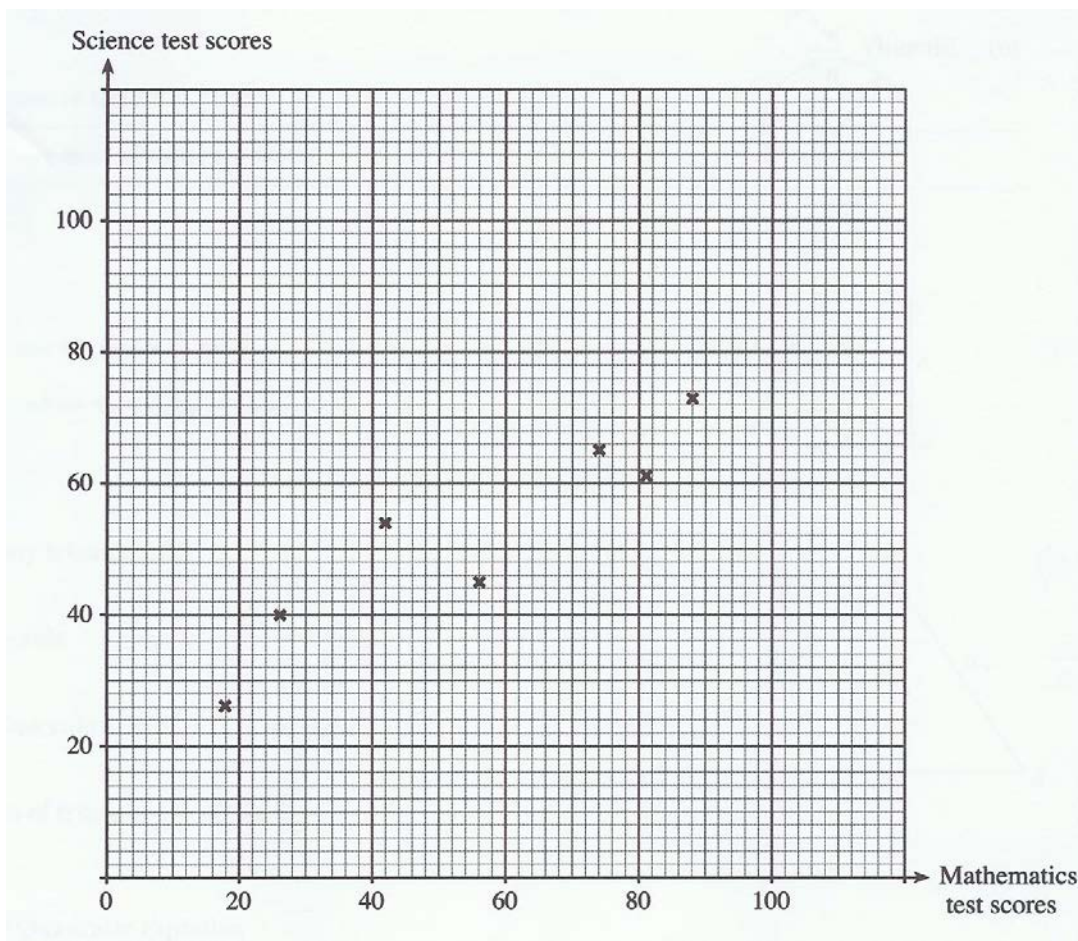
Scatter Graphs

$$\frac{\dots}{10} \times 100 = \dots\%$$

1. The table shows the scores obtained by 7 pupils in a mathematics test and their corresponding scores on a science test.

Mathematics test scores	18	74	56	26	88	81	42
Science test scores	26	65	45	40	73	61	54

The scatter diagram illustrates these results.

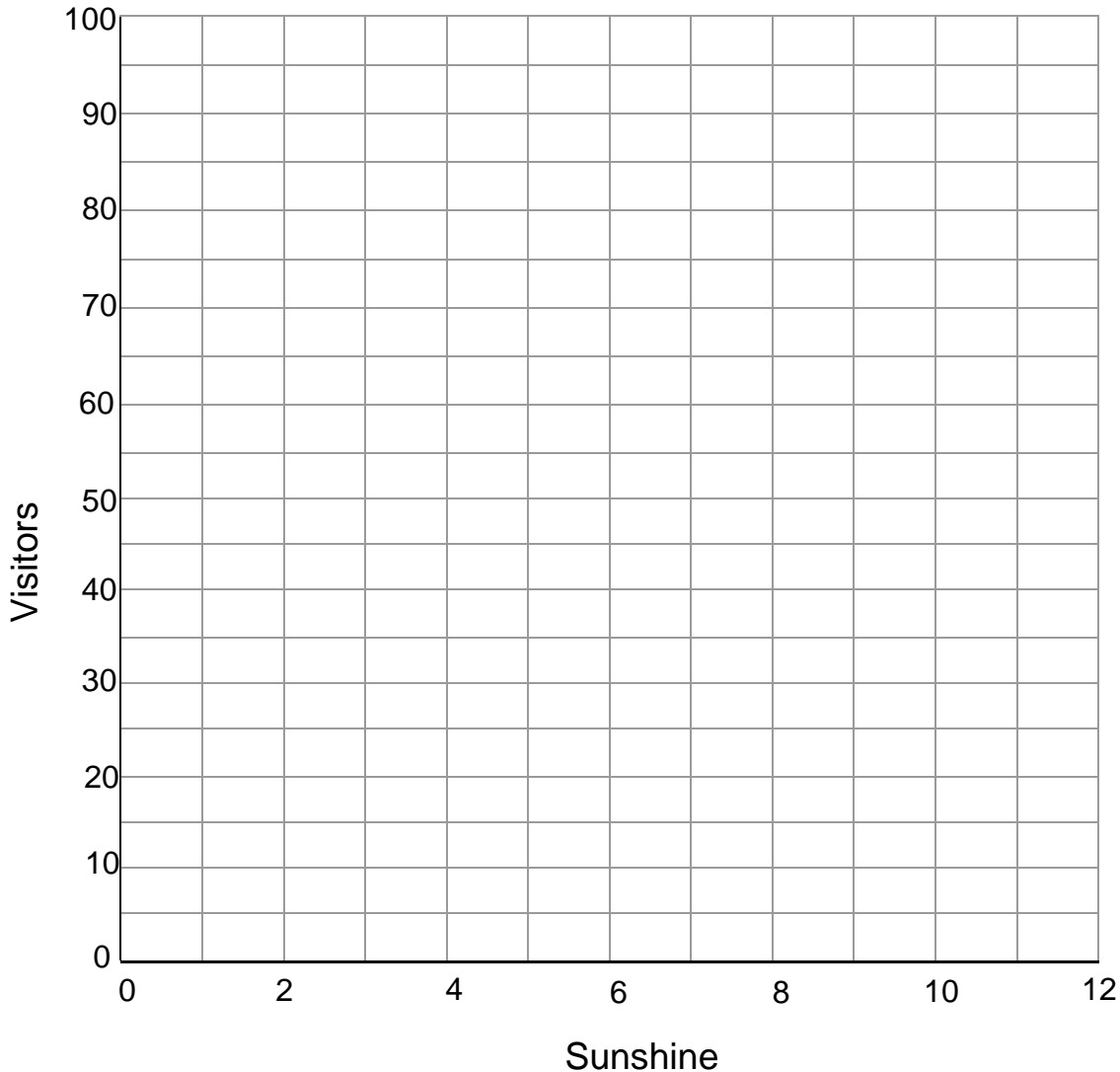


- a) Draw a line of best fit on your scatter diagram. [1]
- b) What type of correlation does this show [1]
- c) John sat the mathematics test and had a score of 68, but he was absent from the science test. Use your line of best fit to find an estimate for John's score on the science test.
..... [2]

2) The number of visitors to a nature park and number of hours of sunshine were recorded each Saturday for 6 weeks. The table below shows the results.

Hours of Sunshine	2	5	1	7	4	10
Number of Visitors	25	45	10	80	35	95

a) On the graph paper provided, draw a scatter diagram of these results. [3]



b) Describe the **correlation** between the number of hours of sunshine and the number of visitors to the nature park

..... [1]

(c) Draw a line of best fit on your scatter diagram. [1]

(d) Use your line of best fit to find an estimate for the **number of visitors** to the nature park on a day **with 6 hours of sunshine**. [1]

Name

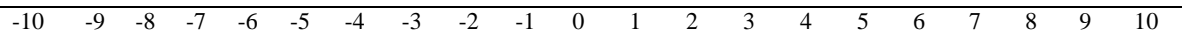
Inequalities

$$\frac{\dots}{25} \times 100 = \dots\%$$

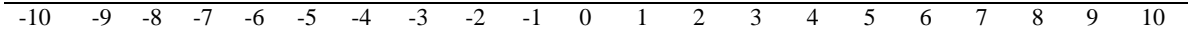
1. Plot the following on a number lines

[4]

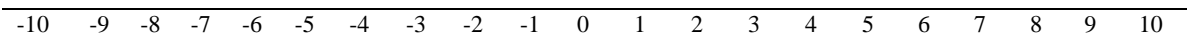
a. $x > 5$



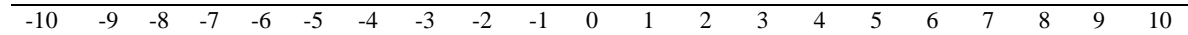
b. $x \leq -2$



c. $-4 < x \leq 3$



d. $-10 \leq x \leq 3$



2. Write the first 3 whole numbers that satisfy these inequalities

[8]

a. $x > 7$

b. $x \leq 1$

c. $x \geq -8$

d. $x < -2$

3. Write down all the whole numbers that satisfy the following inequalities

[8]

a. $3 < x < 7$

b. $-2 \leq x < 1$

c. $-7 \leq x \leq -3$

d. $-2 < x \leq 3$

4. On graph paper, draw the region which satisfies all of the following inequalities. [5]

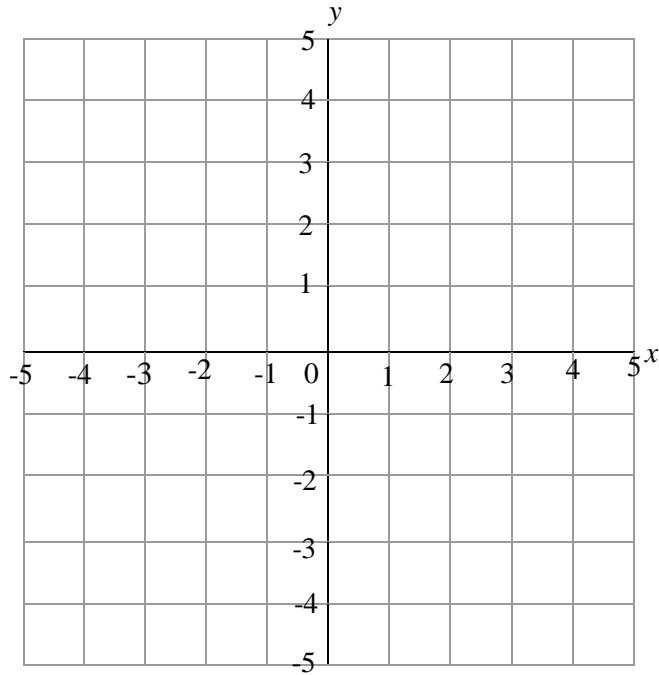
$$x \leq 4$$

$$y \geq -1$$

$$x \geq -2$$

$$y \leq 3$$

Make sure that you clearly indicate the region that represents your answer.



Name

Money

$$\frac{\dots}{15} \times 100 = \dots\%$$

You can use a Calculator to answer these

1. Laura buys 4 magazines each costing £1.20 and pays with a £5 note.
 - a. How much do they cost together ? [1]
 - b. How much change should Laura be given? [1]

2. Find the cost of 74 tickets each costing £37. [3]

.....

.....

3. Andrew buys a CD for £6.25 and a DVD for £11.56.
He pays with a £20 note.
How much change should Andrew be given? [2]

.....

.....

4. Tim orders some clothes from an online catalogue.
He buys 4 pairs of jeans, 5 shirts, 8 packs of socks and 2 pairs of trainers.
 - a. **Complete** the following table to show his bill for these items. [4]

Item	Cost (£)
4 pairs of jeans @ £12.33 per pair	£49.32
5 shirts @ £17.62	
8 packs of socks @ £3.75 per pack	
2 pairs of trainers @ £25.99 per pair	
TOTAL	

- b. The site gives a 10% discount. How much discount does Tim get? [2]

.....

5. In a sale, a television priced at £450 is sold at a discount of 15%.
Find the value of this discount. [2]

.....

Name

Numeracy

$$\frac{\dots}{70} \times 100 = \dots\%$$

NON CALCULATOR Complete the multiplication grid

[50]

X	2	1	4	8	5	7	9	10	6	3
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

6. Write down 10 square numbers [10]

.....

7. Write down the factors of 20 [5]

.....

8. Write down the factors of 40 [5]

.....

Name

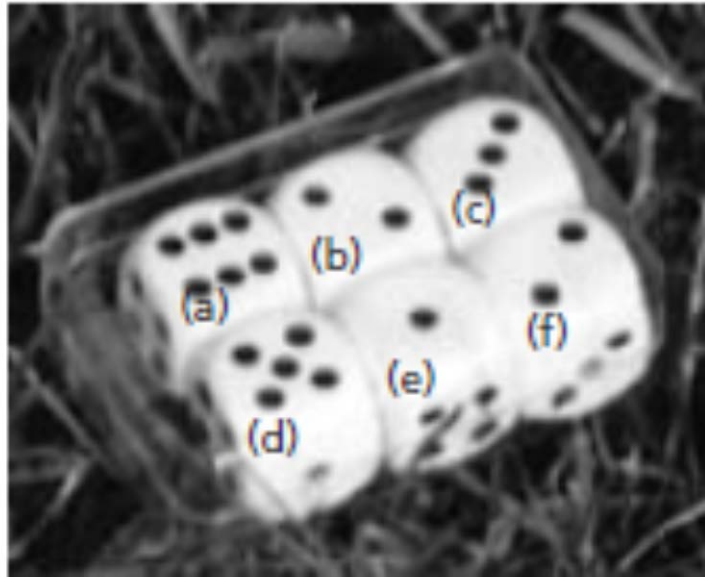
Reasoning

Effort Grade

In this photograph you see six dice, labelled (a) to (f). For all dice there is a rule:

The total number of dots on two opposite faces of each die is always seven.

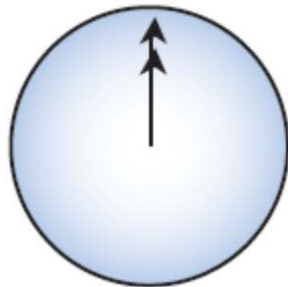
Write in each box the number of dots on the *bottom* face of the dice corresponding to the photograph



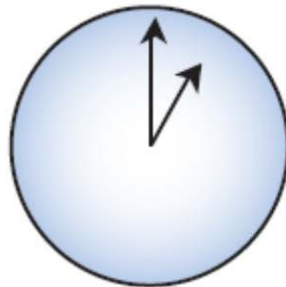
(a)	(b)	(c)
(d)	(e)	(f)

Internet Relay Chat

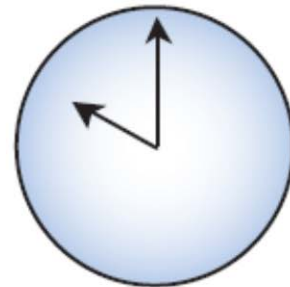
Mark (from Sydney, Australia) and Hans (from Berlin, Germany) often communicate with each other using “chat” on the Internet. They have to log on to the Internet at the same time to be able to chat. To find a suitable time to chat, Mark looked up a chart of world times and found the following:



Greenwich 12 Midnight



Berlin 1:00 AM



Sydney 10:00 AM

Question 1

At 7:00 PM in Sydney, what time is it in Berlin?

Answer:

Question 2

Mark and Hans are not able to chat between 9:00 AM and 4:30 PM their local time, as they have to go to school. Also, from 11:00 PM till 7:00 AM their local time they won't be able to chat because they will be sleeping. When would be a good time for Mark and Hans to chat? Write the local times in the table.

Place	Time
Sydney	
Berlin	