

**Holyhead High School  
Ysgol Uwchradd Caergybi**

**Mathematics Department  
Homework Pack**

**Year 7      Module 4  
Higher**

Topic	Page	Date	Mark %	Comments / To Improve
Negative	1	.....	.....	..... .....
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Algebra (2)	5	.....	.....	..... .....
Sequences	6	.....	.....	..... .....
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Name .....

Class ..... Teacher .....

Name .....

**Negative Numbers**

$\frac{\dots}{33} \times 100 = \dots\%$

Circle **the highest temperature**

- a.  $-14^{\circ}\text{C}$  or  $2^{\circ}\text{C}$       b.  $-5^{\circ}\text{C}$  or  $0^{\circ}\text{C}$       c.  $-23^{\circ}\text{C}$  or  $-24^{\circ}\text{C}$       [3]

2. Write these temperatures in order, from the smallest to the largest      [2]

- a.  $-7^{\circ}\text{C}$ ,  $-1^{\circ}\text{C}$ ,  $-4.5^{\circ}\text{C}$ ,  $-5^{\circ}\text{C}$ ,  $0^{\circ}\text{C}$ ,  $-0.5^{\circ}\text{C}$       .....

3. Use the correct sign  $>$  or  $<$

- a.  $7^{\circ}\text{C}$  ....  $1^{\circ}\text{C}$       b.  $-1^{\circ}\text{C}$  .....  $2.5^{\circ}\text{C}$       c.  $-12^{\circ}\text{C}$  .....  $-3^{\circ}\text{C}$       [3]

4. What's the difference between the following numbers      [3]

- a.  $-3$  and  $7$       .....
- b.  $-12$  and  $-1$       .....
- c.  $-98$  and  $-77$       .....

5. Find the answers to      [6]

- a.  $2 - 6$       .....      c.  $-6 - 2$       .....      e.  $-14 - 5$       .....
- b.  $-5 + 4$       .....      d.  $-10 + 7$       .....      f.  $-35 + 19$       .....

6. Calculate       $-3 - 13 + 6 - 5$       .....      [2]

7. Find the value of      [6]

- a.  $3 \times -5 =$  .....      d.  $-2^3 =$  .....
- b.  $-6 \times -7 =$  .....      e.  $-4 \times -3 + 7 =$  .....
- c.  $-3^2 =$  .....      f.  $-15 + -3 \times 7 =$  .....

8. Find the value of

- a.  $30 \div -5 =$  ..... [1]
- b.  $-36 \div 6 =$  ..... [1]
- c.  $-72 \div -10 =$  ..... [1]
- d.  $20 \div -0.5 =$  ..... [1]

9. Find the value of

- a.  $4 - -6 =$  ..... [1]
- b.  $-6 + -7 =$  ..... [1]
- c.  $-7 - +8 =$  ..... [1]
- d.  $-13 - -15 =$  ..... [1]

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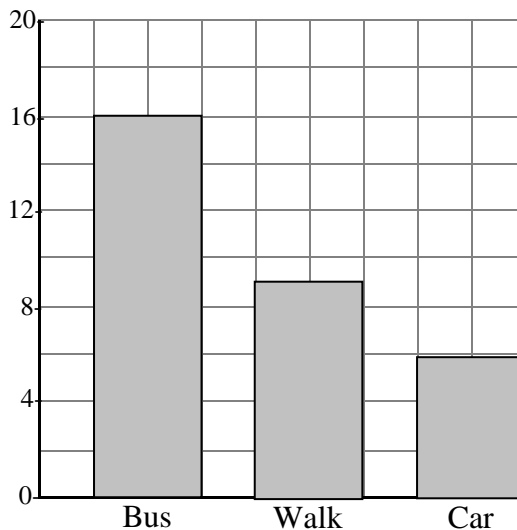
**Graphs**

$$\frac{\dots}{36} \times 100 = \dots\%$$

1. The bar graph shows how the pupils from class 7.1 get to school.

a. How many people go by car to school ..... [2]

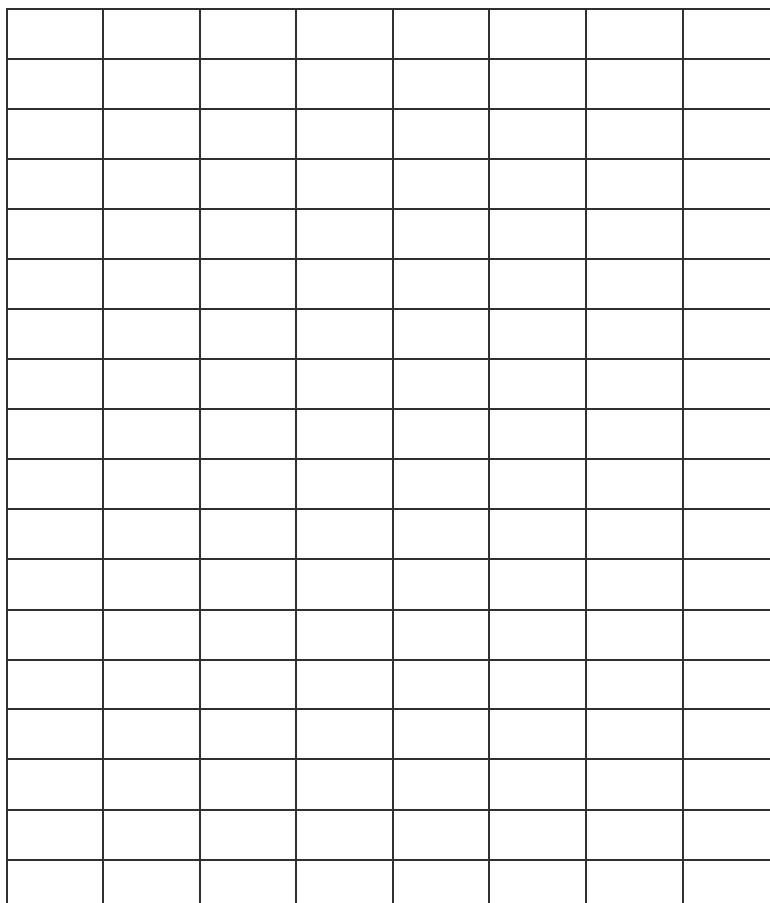
b. How many pupils are in 7.1 ? ..... [4]



2. Use the information from the table to draw a bar graph.

Remember to label the graph correctly and use a ruler. [5]

'How Class 7.5 get to school'	Bus	Walk	Car
Number of pupils	11	16	6



3. The pictogram below shows the number of different types of crisps that a shop sells



= 50 packets

- a. How many prawn cocktail crisps were sold? ..... [1]
- b. How many cheese & onion crisps were sold? ..... [2]
- c. What was the total number of crisps sold? ..... [3]

Cheese & Onion	
Salt & Vinegar	
Prawn Cocktail	
Ready Salted	
Chicken	

4. Use the information below to draw a pictogram. Number of hours of Sunshine over Easter

Use to represent 2 hours [4]

Day of the week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sunshine hours	8	5	10	7	9	4	3

Number of people in household	Number of hours of Sunshine
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

5. The following table shows the results of a maths test.

15 26 8 11 17 28 30 9 12 22  
 25 14 18 20 16 11 25 19 27 5  
 3 17 6 7 25 9 23 20 19 30

a. Complete the tally table . [4]

b. Which group had the most pupils in it ?  
 ..... [1]

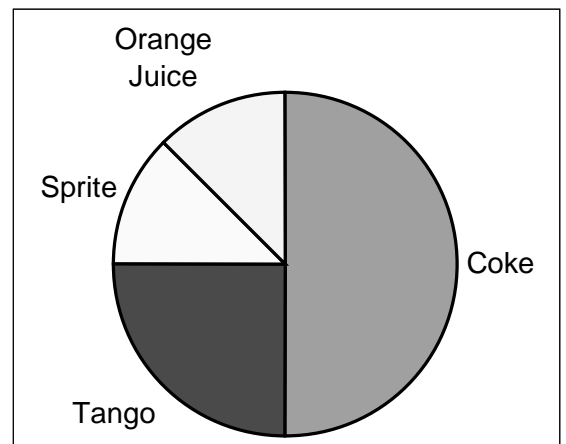
Marks	Tally	Frequency
1 – 10		
11 – 20		
21 – 30		
Total		

6. The pie chart shows the results of a survey of year 7 boys and their favourite drink.

**60 Boys like Coke.**

a. How many boys liked Sprite ?  
 ..... [1]

b. How many boys were in the survey ?  
 ..... [2]



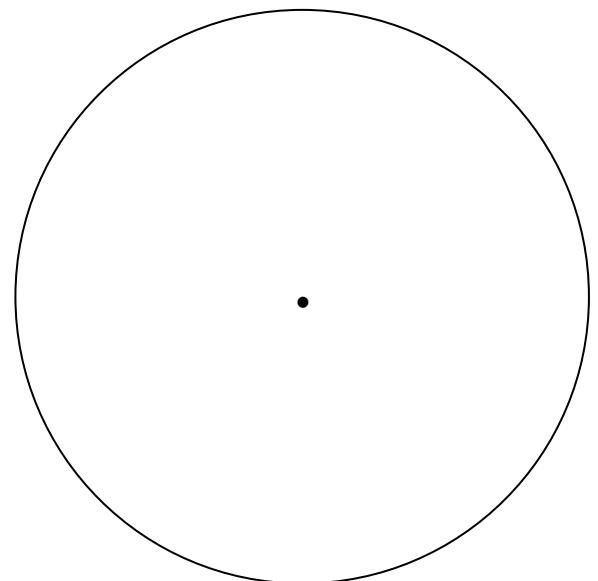
7. The following data shows the favourite take away of pupils from year 7 in year 7

a. Calculate the (Magic Number)  $360 \div 80 = \dots\dots\dots$  [1]

b. Complete the table [3]

c. Draw the angles on the Pie chart [3]

Type	Freq		Angle
Fish and Chips	36		
Pizza	20		
Curry	12		
Kebab	12		



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**Algebra (2)**

$\frac{\dots}{30} \times 100 = \dots\%$

**I'm thinking of a number**

a. I add 6 to get 35 what number am I thinking of ? ..... [1]

b. I subtract 16 to get 42 what number am I thinking of ? ..... [1]

c. I multiply a number by 3 and then add 6 to get 21  
what number am I thinking of ? ..... [2]

d. I divide a number by 5 and then subtract 7 to get 4  
what number am I thinking of ? ..... [2]

2. Solve the following. **You must show full workings out.** [16]

a.  $x + 7 = 18$   
.....  
.....

e.  $3x = 27$   
.....  
.....

b.  $x - 13 = 41$   
.....  
.....

f.  $4x = 14$   
.....  
.....

c.  $x + 9 = 2$   
.....  
.....

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

d.  $x - 11 = -5$   
.....  
.....

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

3. Solve the following. **You must show full workings out** [8]

a.  $2x + 3 = 15$   
.....  
.....

$8x + 11 = 35$   
.....  
.....

b.  $6x + 13 = 55$   
.....  
.....

$4x - 7 = 3$   
.....  
.....

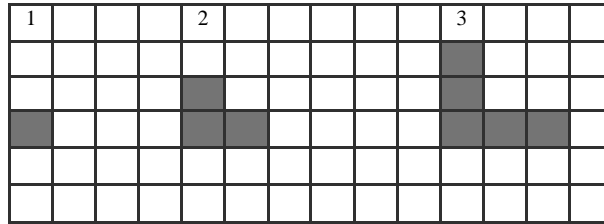
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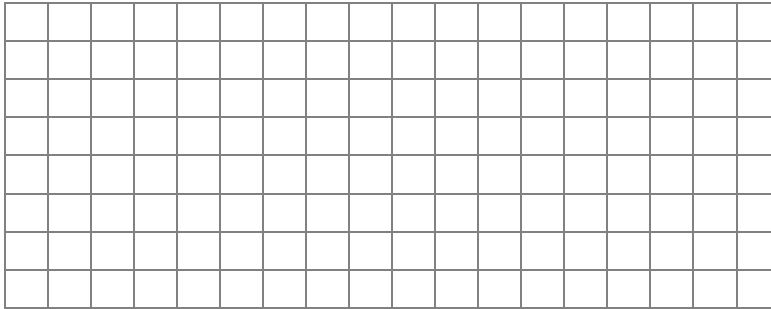
**Sequences**

$\frac{\dots}{26} \times 100 = \dots\%$

1. Look at the following patterns



a. Draw the 4<sup>th</sup> and 5<sup>th</sup> pattern [4]



b. Complete the table. [3]

Pattern No	1	2	3	4	5
Number of Tiles					

c. How many times would tiles would be in pattern 10? ..... [2]

2. For each of the following number patterns

- a. Write the next three terms
- b. the rule to get from term to the next

i. 14, 17, 20, ....., ....., ..... rule ..... [3]

ii. 28, 23, 18, ....., ....., ..... rule ..... [3]

3. Fill in the missing blanks [3]

3, ....., ....., ....., 27

4. Find formulae for the nth term for each of the following sequences

a. 6, 10, 14, ..... [2]

b. 2, 7, 12, ..... [2]

5. The formula for a sequence is  $7n - 3$

a. Find the 20<sup>th</sup> term ..... [2]

b. What term is equal to 18? ..... [2]

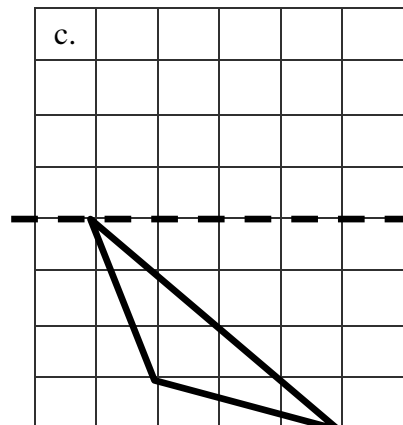
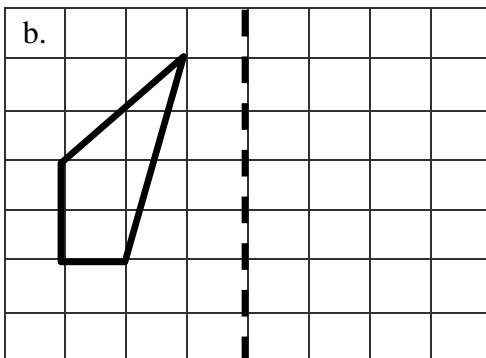
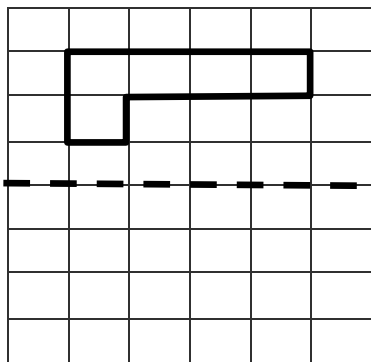
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**Transformations** (1)  $\frac{\dots}{21} \times 100 = \dots\%$

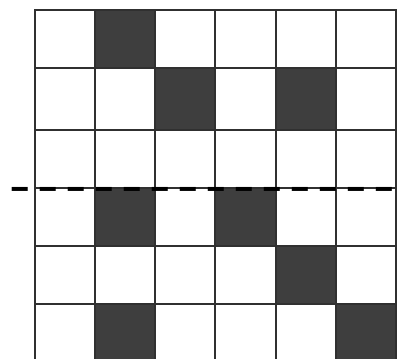
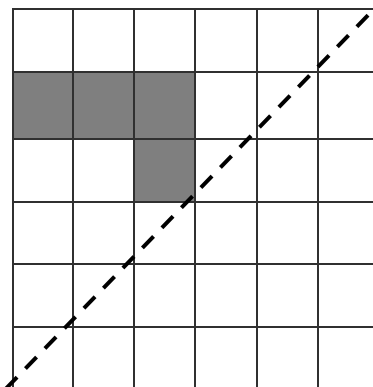
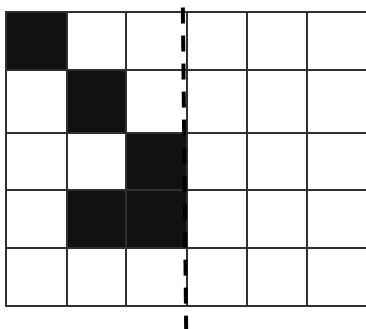
1. Draw the reflections of these shapes in the line of symmetry

[6]



2. Shade so there is symmetry either side of the mirror line

[9]



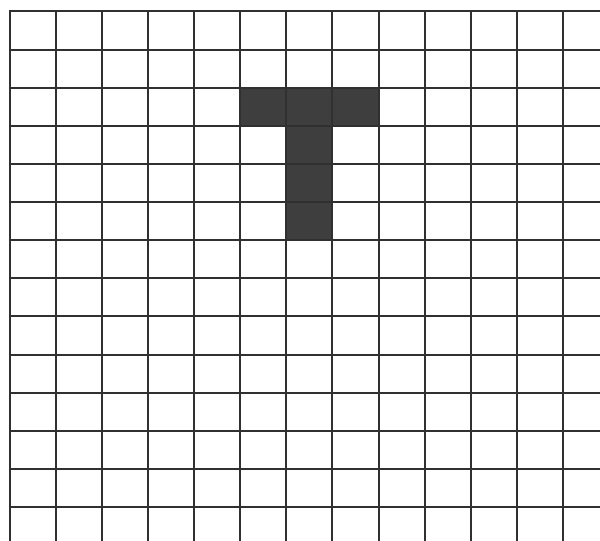
3.

a. 4 squares to the left Label A [2]

b. 5 squares down and 3 to the right Label B [2]

c. Describe the transformation of A to B [2]

.....



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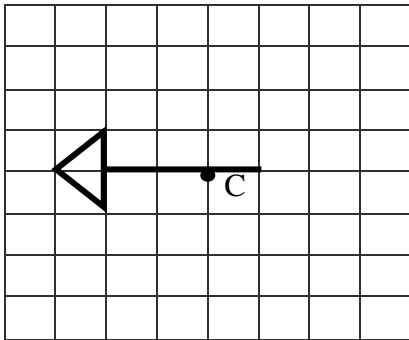


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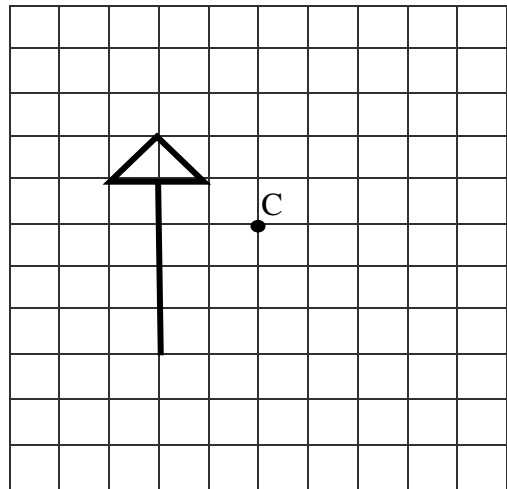
Transformations (2)  $\frac{33}{14} \times 100 = \dots\%$

4. Rotate the shapes, Draw the arrows in it's new position [4]

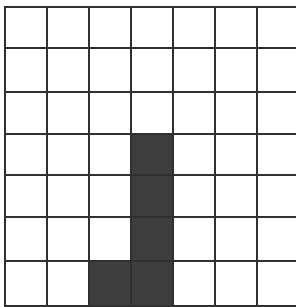
a. **quarter** of a turn **anticlockwise**.



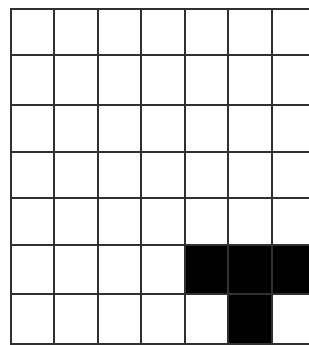
b. **three quarters** of a turn **clockwise**.



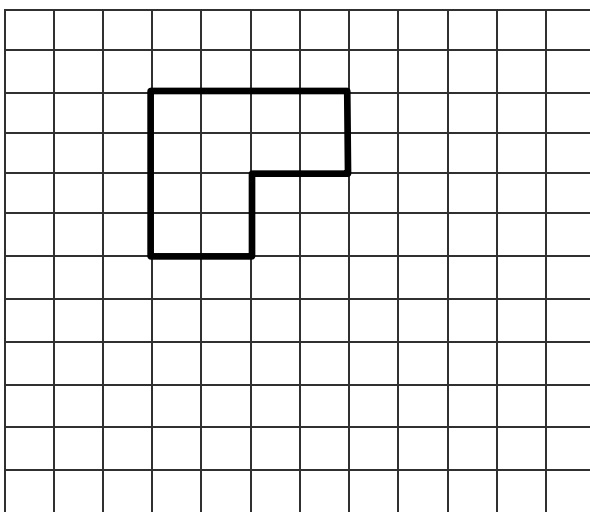
5. Complete the shapes so that it has a  
a. rotational symmetry of 2 [2]



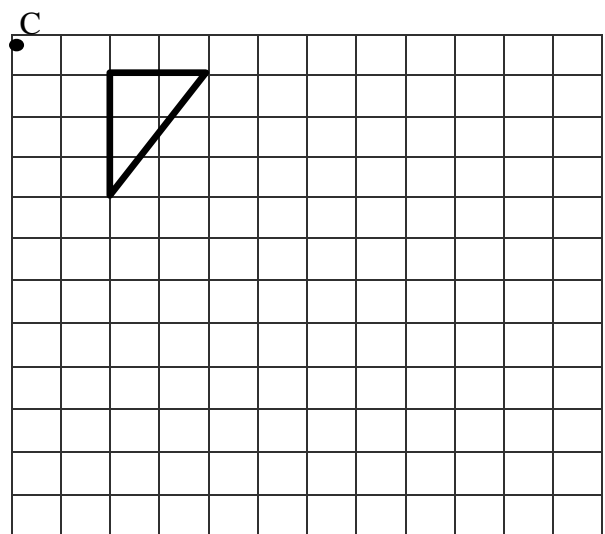
b. rotational symmetry of 4 [2]



6. Enlarge this shape by a scale factor  
a. Scale factor of  $\frac{1}{2}$  [3]



b. of 3 from centre point C [3]



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