

# Ysgol Uwchradd Caergybi

## Mathematics Department

### Homework Pack

## Year 8      Module 7

### Intermediate

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Name .....

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

Name .....

# Units

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

2. Which metric unit would you use to measure the following ? [4]

- a. The distance from Holyhead to Cardiff .....
- b. The length of a school exercise book .....
- c. The weight of a horse .....
- d. The volume of a bath .....

3. Complete the following table [5]

**Help**

1kg = 1000g  
1m = 100cm  
1cm = 10mm

3kg	..... g
7.5kg	..... g
12km	..... m
2.5m	..... cm
7.4cm	..... mm

4. Complete the following table [5]

.....kg	4000g
.....kg	7600g
.....km	5300m
.....cm	125cm
.....cm	45mm

5. Convert the following [5]

- a. 8km to miles .....
- b. 100 miles to kilometres .....
- c. 5kg to pounds .....
- d. 30cm to inches .....
- e. 6inches to cm .....

To improve I need to .....

Name .....

# Ratio

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

1. There are 80 boys and 70 girls in Ysgol Nant [2]

- a. Write this as a ratio ..... : .....
- b. Rewrite this as a ratio in its simplest form ..... : .....

2. Alun and Berwyn share £100 in the ratio 4:6. [2]

- a. How much does
- b. Alun receive? .....
- c. Berwyn receive? .....

Working out

.....

.....

.....

3. Gethin, Heledd and Irfon share £1600 in the ratio 5:2:1.

How much does [3]

- a. Gethin receive ? .....
- b. Heledd receive ? .....
- c. Irfon receive ? .....

Working out

.....

.....

.....

4. To make bolognaise for 3 people you need 2 kg of mince beef How much mince is needed to make

- a. 6 people? ..... [3]
- b. 12 people? .....

Working out

.....

.....

.....

5. A Map has a scale of 1 cm : 5km.

Find the actual distance between [3]

- a. Bangor to Holyhead – 4cm .....
- b. Liverpool to Chester – 6.5cm .....
- c. Holyhead to Llandudno – 12.3cm .....

6. A Map has a scale of 1 cm : 4km.

Find the distance on the map of the following places [2]

- a. Pentraeth and Llangefni – 8km .....
- b. Bangor to Caergybi - 36km .....

To improve I need to .....

1. Mrs Cabbage made a survey of the number of pieces of fruit 10 pupils from class 7.A had in the last week    3    10    7    1    3    6    9    11    4    12

- a. Work out the mean value ..... [3]
- b. Write down the mode ..... [1]
- c. Find the median ..... [2]
- d. Work out the range ..... [1]

2. A survey was made of the number of times each member of 16 staff exercised in a week

a. Complete the table ..... [3]

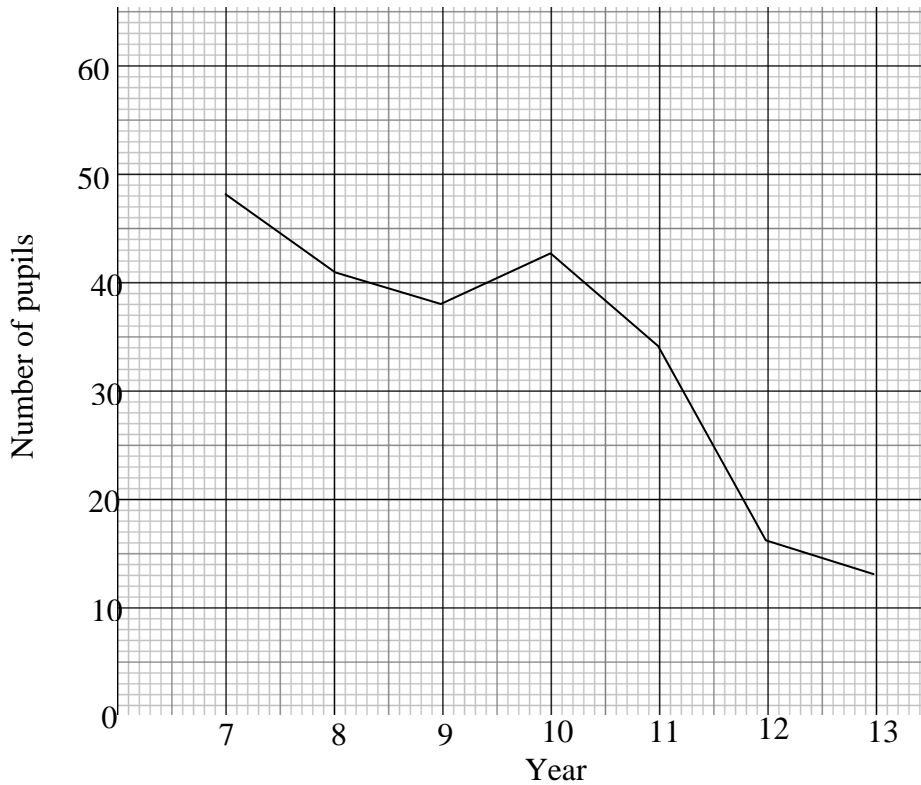
Exercise times a week	Number of staff	Total number of exercises	Total
0	2	0 x 2	0
1	4	1 x 4	4
2	3	2 x 3	6
3	2	.....x .....	.....
4	3	.....x .....	.....
5	2	.....x .....	.....
	16	TOTAL	.....

- b. Write down the mode ..... [1]
- c. Calculate the mean ..... [2]

3. Complete the following poem ..... [4]

Hey diddle diddle, the ..... the middle,  
 You ..... then ..... for the mean.  
 The ..... is the one that you see the .....  
 And the ..... is the ..... between

4. The following frequency polygon shows the results of the number of pupils who have school dinners



a. How many pupils from year 7 have school dinners ..... [2]

b. How many pupils have school dinners ..... [3]

The table gives the number of pupils who have sandwiches and the number of pupils who **don't** eat in the school

Year	7	8	9	10	11	12	13
Sandwiches	14	23	15	18	12	6	3
Go home	8	10	9	16	24	18	17

c. On the graph above draw frequency polygons to show this data, label your graph correctly ..... [2]

d. Which year has the most pupils(remember to count the ones who had school dinners)  
 .....  
 ..... [1]

To improve I need to .....

Name .....

# Averages-Scatter

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

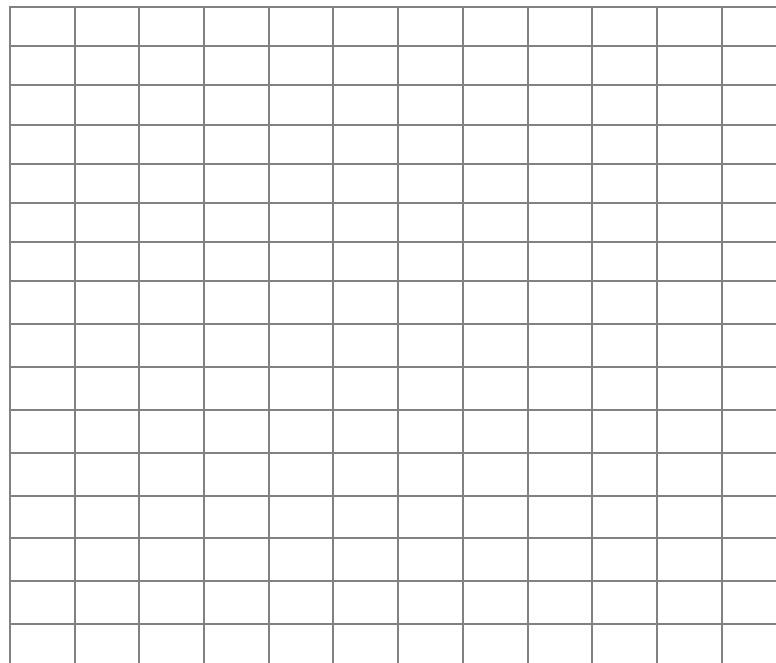
1. Mr Lettuce carried out an experiment on the length of 30 carrots from *Save Quick* supermarket in centimetres. (Here are his results, to the nearest millimetre)

12.5 11.3 9.3 8.6 7.2 8.7 9.0 11.0 10.1 8.2 9.9 12.4 9.3 7.5 11.9  
10.2 9.6 7.8 8.4 12.1 11.7 10.5 10.1 9.6 8.9 12.6 11.7 10.3 9.7 8.8

e. Copy and complete the tally table. [3]

Length in cms	Tally	Frequency
$7 \leq C < 8$		
$8 \leq C < 9$		
$9 \leq C < 10$		
$10 \leq C < 11$		
$11 \leq C < 12$		
$12 \leq C < 13$		
Total		

f. Draw a bar chart of this grouped data [4]

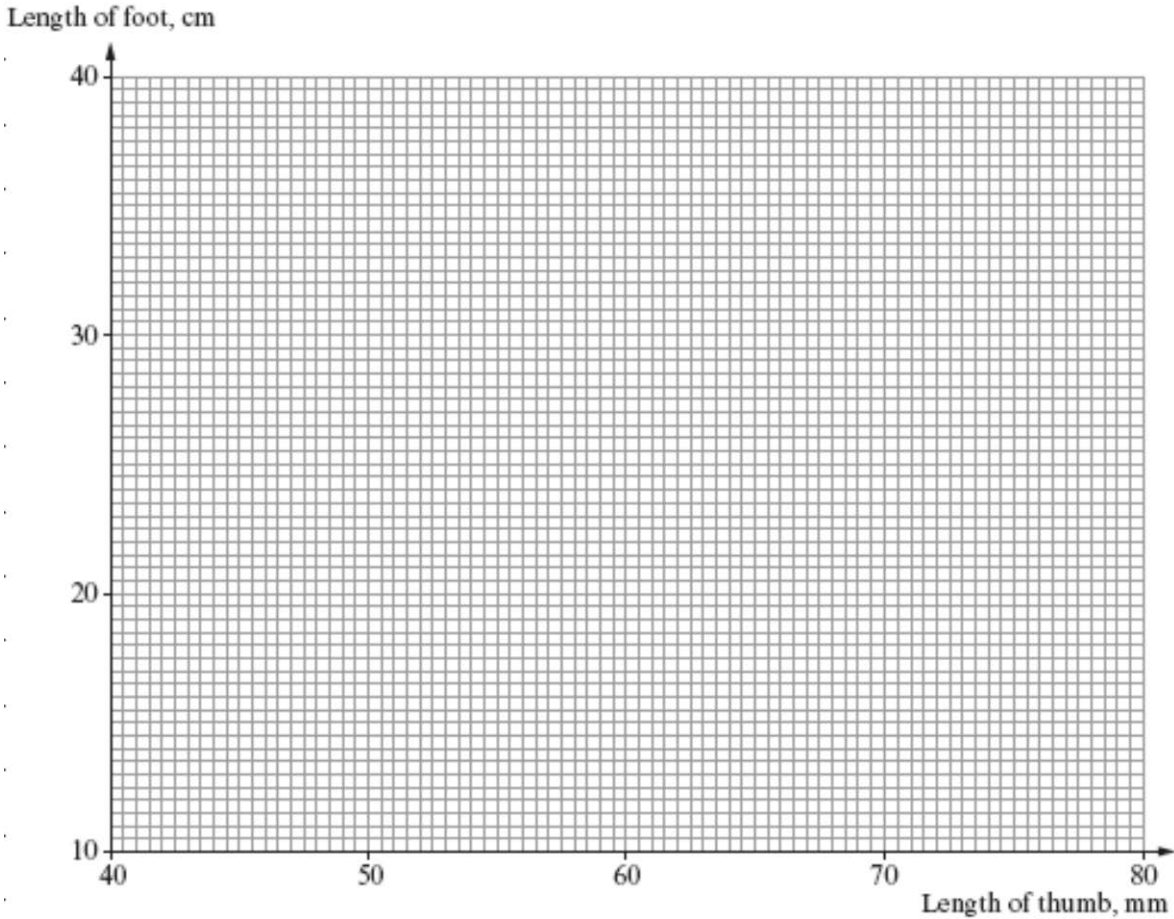


g. What is the modal class  
..... [1]

2. A number of students measured the length of their thumb in millimetres and the length of their foot in centimetres.

Thumb, mm	56	70	48	54	62	64
Foot, cm	24	36	20	22	28	32

- a. Draw a scatter diagram to display these measurements. [2]



- b. Draw a line of best fit on your scatter diagram. [1]

- c. State the type of correlation shown in your scatter diagram. [1]

.....

- d. Give a possible reason why the graph was drawn with neither scale starting at zero. [1]

.....

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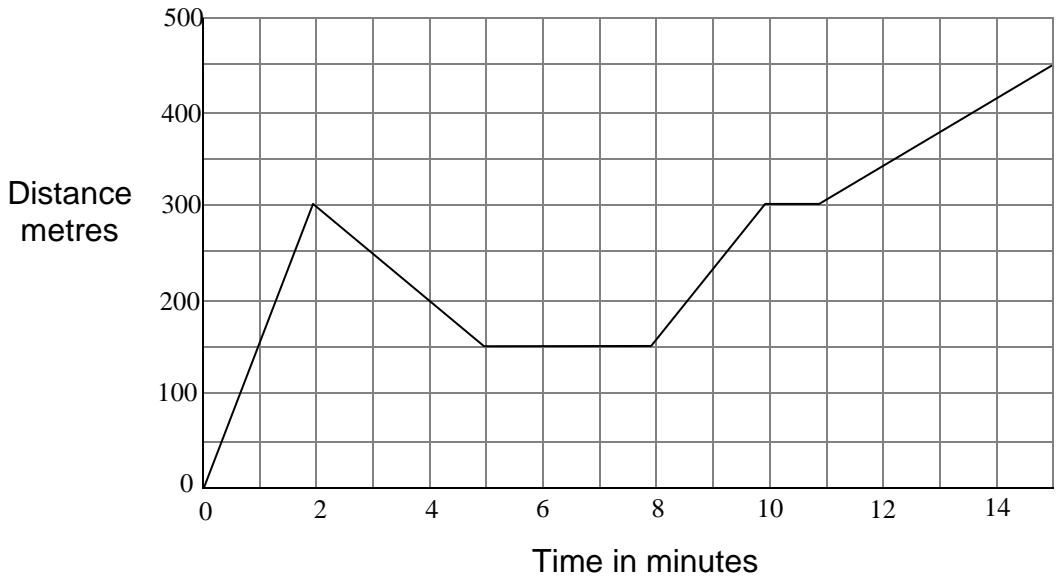
To improve I need to .....

Name .....

Distance Time

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

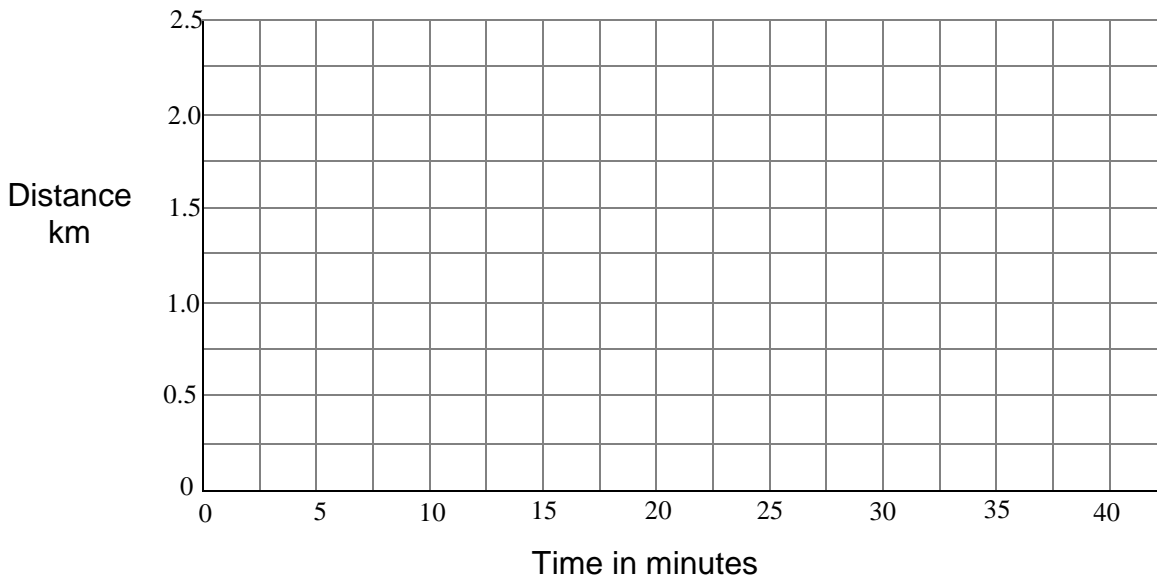
1. Look at the following graph and complete the following sentences below. [8]



- a. Sian runs to the corner shop, .....metres in .....minutes.
- b. She realizes she forgot her money and walks home in the shop for .....minutes.
- c. She then runs to meet her friend, .....metres in ..... minutes.
- d. They chat for .....minutes.
- e. They walk together to the chippy, ....., metres in ..... minutes.

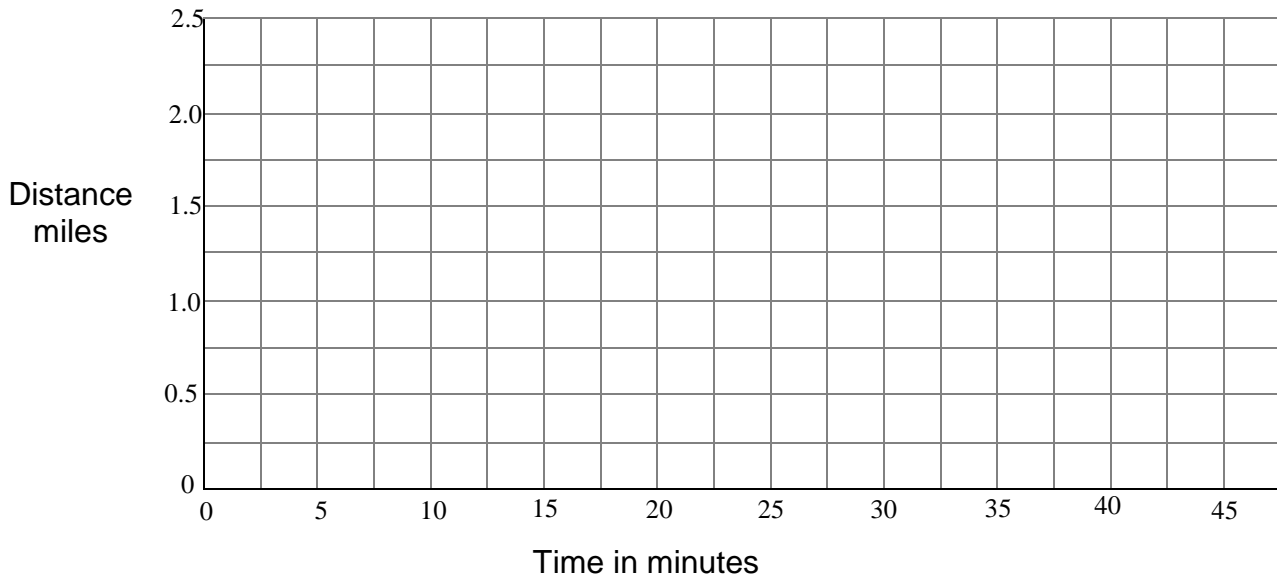
2. Draw distance time graphs of the following

- a. Danny leaves home at he walks 1km to the Spar in 20 minutes, [2]  
He stays in the shop for 5minutes. [2]  
Danny then runs the 1.5km to school in 15 minutes. [2]





- b. Sian walks the 1 mile to town to meet her friends in 20 minutes [2]  
 She meets her friends in the café and stays there for 15 minutes [2]  
 She then runs the mile home in 10 minutes . [2]



3. Complete the following Formula       $Speed = \frac{\dots\dots\dots}{\dots\dots\dots}$       [1]

4. Calculate the speed in mph of the following journey's      [2]

a. Mr A Williams travels 200 from Holyhead to Cardiff in 4 hours

.....

b. Mr D Williams travels the 140 miles from Holyhead to Chester in 2 hours      [2]

.....

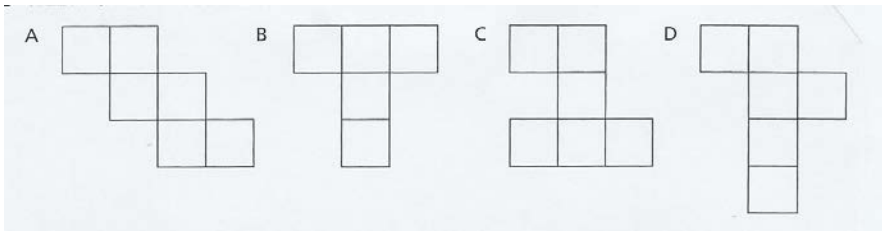
To improve I need to .....

Name .....

# Nets

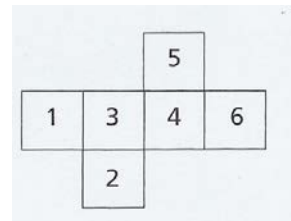
$$\frac{\dots}{20} \times 100 = \dots\%$$

1. Which of these are nets of a cube? Circle the correct answers [2]

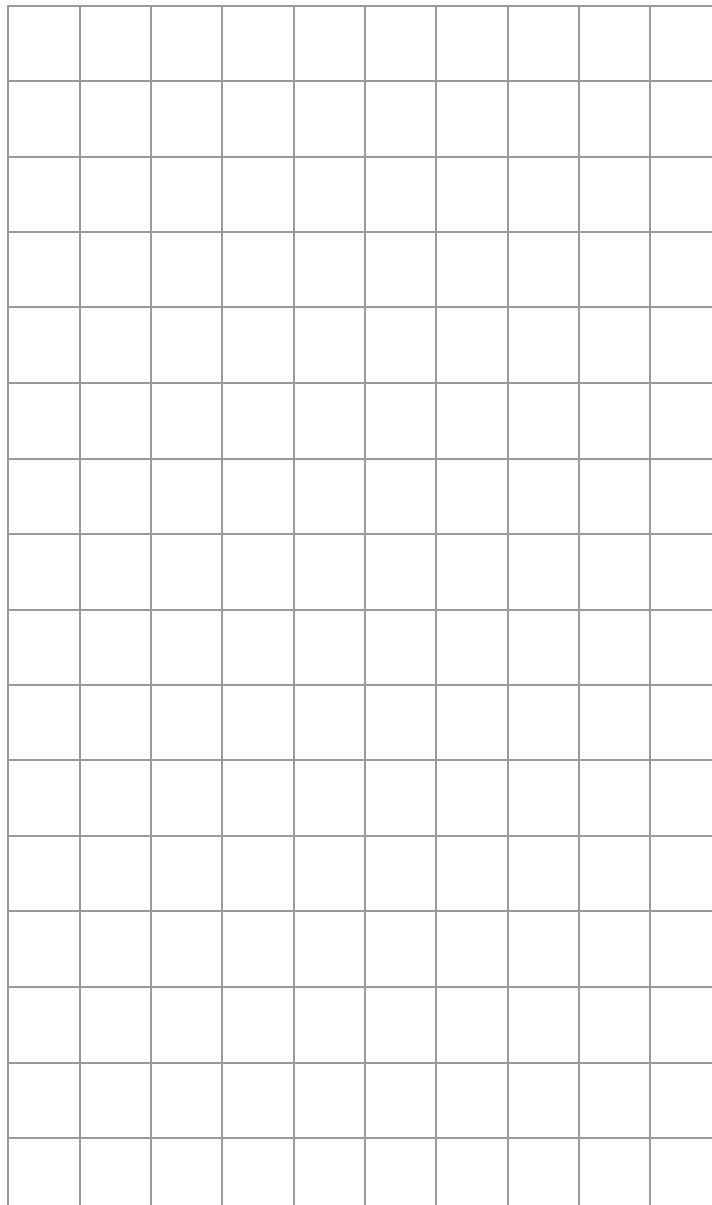
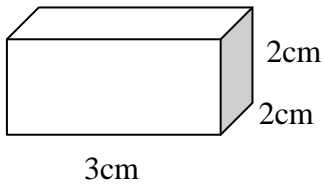


2. Imagine folding up this net to make a dice. [2]

- a. Which number will be opposite the 5? .....
- b. Which number will be opposite the 6? .....

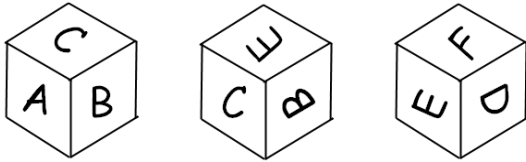


3. This is a matchbox box, draw an accurate net of the tray on squared paper. [6]



4. Here are three different views of the same cube.

Which letters are opposite each other ?



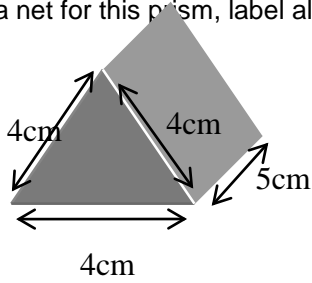
.....  
 .....  
 .....

[3]

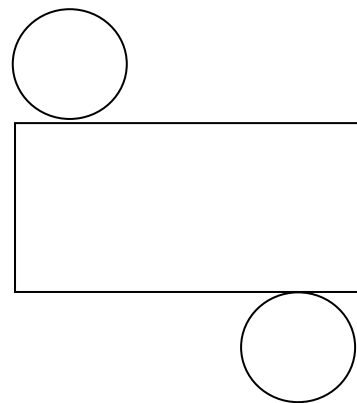
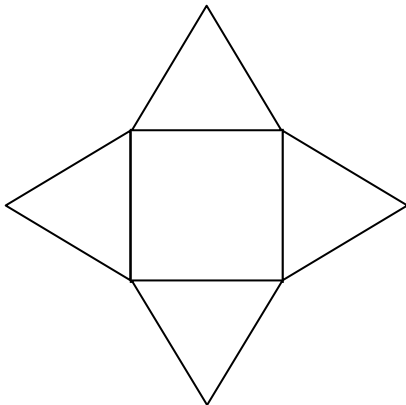
5. This is a triangular prism. The ends of the prism are isosceles triangles.

Sketch a net for this prism, label all the sides with correct measurements

[5]



6. Name the 3-D shapes that these nets make.



[2]

a. ....

b. ....

To improve I need to .....

Name .....

Numeracy -1

$\frac{\dots}{20} \times 100 = \dots\%$

Complete the multiplication grid

X	7	10	4	2	5	6	9	1	3	8
8	<b>56</b>									
7	<b>49</b>									
6	<b>42</b>									
3	<b>21</b>									
5	<b>35</b>									
4	<b>28</b>									
2	<b>14</b>									
9	<b>63</b>									
10	<b>70</b>									
1	<b>7</b>									

1.  $11^2$       Answer      .....
2.  $8^2$       Answer      .....
3.  $\sqrt{81}$       Answer      .....
4.  $\sqrt{400}$       Answer      .....
5.  $2^3$       Answer      .....
6.  $1^2 + 2^2 + 3^2$       Answer      ..... [6]
  
7. Write down a square number between 80 and 100      Answer      ..... [2]
8. Write down a Prime number between 10 and 20      Answer      ..... [2]

To improve I need to .....

Name .....

Numeracy -2

$\frac{3}{20} \times 100 = \dots\%$

No working out No marks - Working out here

[16]

1.

$$\begin{array}{r} 3 \ 7 \ 6 \\ + 2 \ 4 \ 8 \\ \hline \end{array}$$

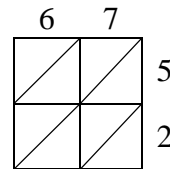
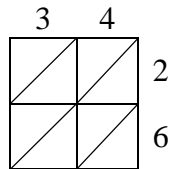
$$\begin{array}{r} 3 \ 6 \ 9 \\ + 5 \ 8 \ 6 \\ \hline \end{array}$$

2.

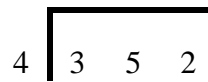
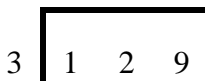
$$\begin{array}{r} 4 \ 7 \ 9 \\ - 2 \ 8 \ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \ 6 \ 3 \\ - 4 \ 7 \ 8 \\ \hline \end{array}$$

3.



4.



5. What number must be added to 78 to make 121?

[2]

Answer .....

6. What is the difference between 82 and 34

[2]

Answer .....

To improve I need to .....