

Ysgol Uwchradd Caergybi

Mathematics Department

Homework Pack

Year 8 Module 7

Higher

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Name

Class Teacher

Name

Units

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

1. 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

2. Complete the following table

4kg g
1.3kg g
..... kg	2350 g
46mm cm
3.4m cm
2.75km m

[6]

3. Convert the following [6]

- a. 18km to miles 20miles to km
- b. 5kg to pounds 140pounds to kg
- c. 30cm to inches 5 foot to meters

4. Convert 30meters per second (30ms^{-1})

- a. to km per hour (kmh) [1]
.....
- b. miles per hour (mph) [3]
.....
.....

To improve I need to

Name Ratio

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

1. Alun and Berwyn share £1200 in the ratio 5:7. [2]

How much does

- c. Alun receive?
- d. Berwyn receive?

2. Gethin, Heledd and Irfon share £480 in the ratio 5:2:1. [3]

How much does

- e. Gethin receive ?
- f. Heledd receive ?
- g. Irfon receive ?

Working out

.....

.....

.....

3. Alun and Berwyn share a sum of money in the ratio 5:7. Alun receives £50 [2]

- a. What is the total?
- b. How much does Berwyn receive?

Working out

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4. To make Jam, fruit and sugar are mixed in the ratio 3:5 How much sugar do you need if your fruit weighs [2]

- a. 9kg
- a. 12kg

Working out

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5. To make bolognaise for 3 people you need 1.5 kg of mince beef [2]

How much mince is needed to make

- a. 6 people?
- b. 25 people?

Working out

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6. A Map has a scale of 1 cm : 5km. Find the actual distance between [2]

- a. Bangor to Holyhead – 4cm
- b. Holyhead to Llandudno – 12.3cm

7. 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

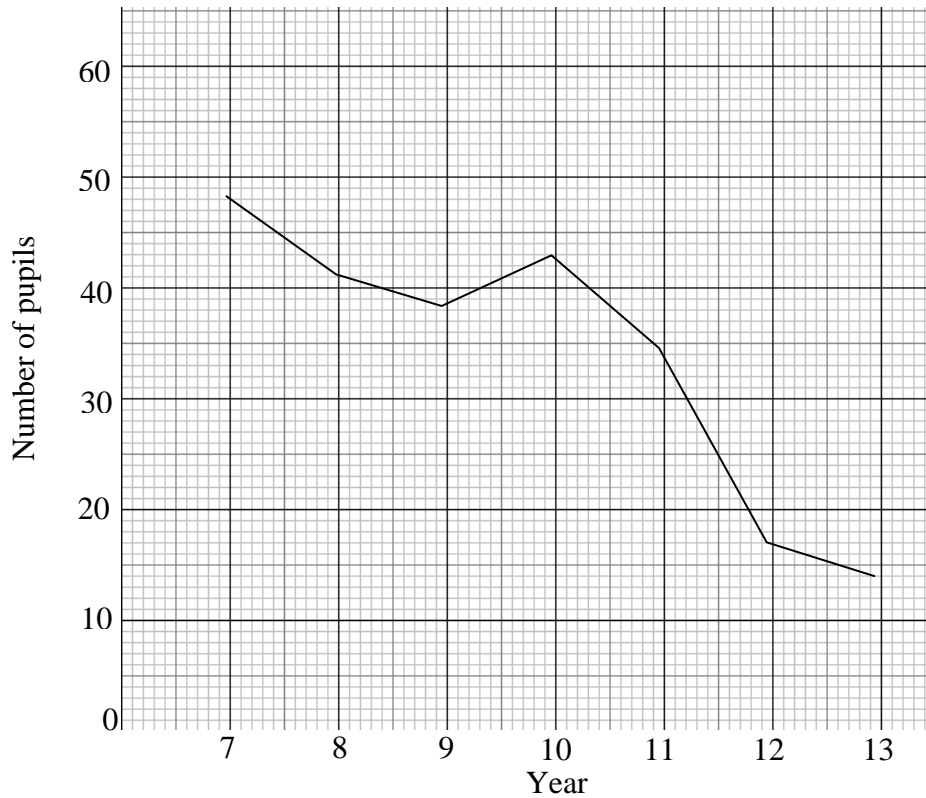
- a. Work out the mean value [3]
- b. Write down the mode [1]
- c. Find the median [2]
- d. Work out the range [1]

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

Exercise times a week	0	1	2	3	4	5	6	7
Number of staff	2	4	3	2	3	2	1	0

- a. Write down the mode [1]
- b. Calculate the mean [4]
- c. Find the median [2]

3. 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 [4]

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

.....
 [2]

To improve I need to

Name

Averages -Scatter

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

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

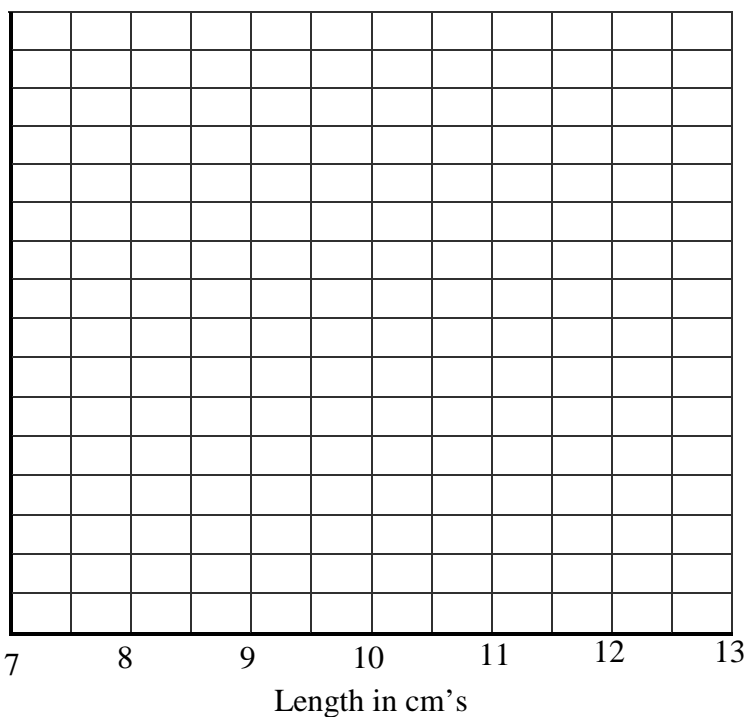
12.5 11.3 9.3 8.6 7.2 8.7 9.0 11.0 10.1 8.2 9.9 12.4 9.3 7.5 11.9
 10.2 9.6 7.8 8.4 12.1 11.7 10.5 10.1 9.6 8.9 12.6 11.7 10.3 9.7 8.8

a. Complete the tally table.

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		

[4]

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



c. What is the modal class [2]

2. The following table shows the amount 100 pupils from year 11 spend on their mobile phone every month.

Total (£)	0 - 4.99	5 - 9.99	10 - 14.99	15 - 19.99	20 - 24.99	25 - 29.99	30 - 34.99	35 - 39.99
Frequency	5	9	15	17	21	23	8	2

Using the information from the table to find an **approximation for the mean** amount spent. You will need to find the midpoint of each group.

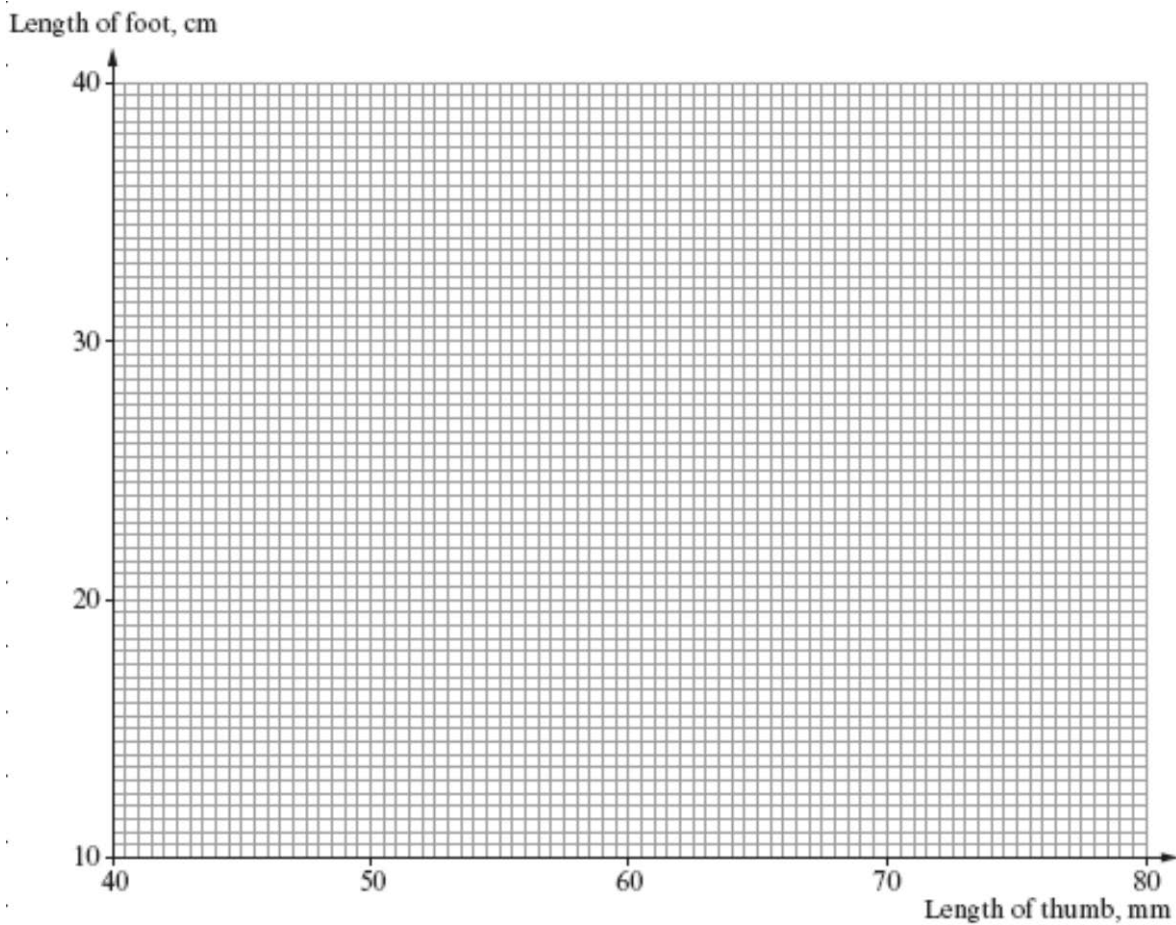
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 [4]

3. 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. [2]

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

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

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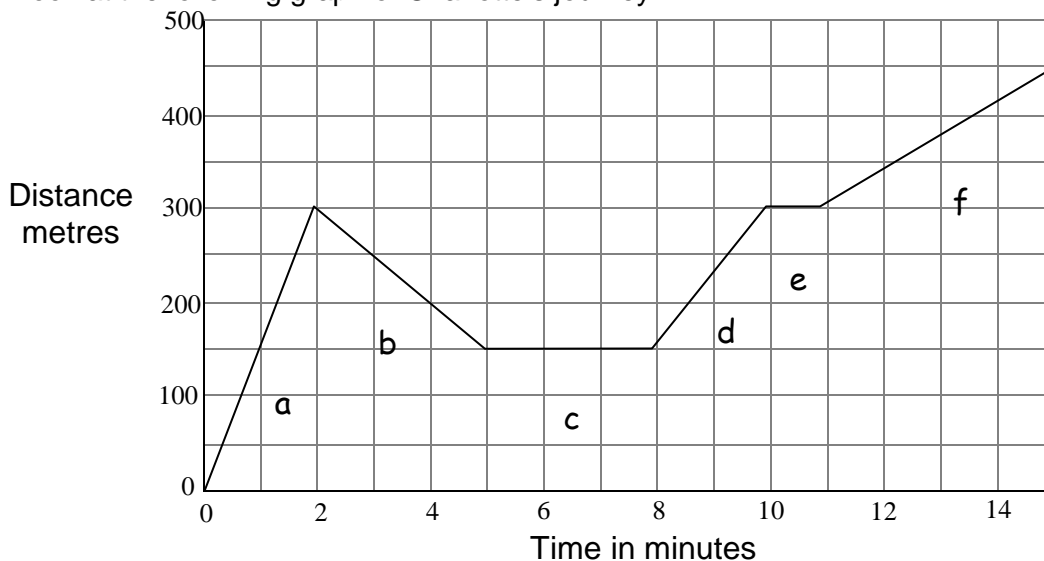
To improve I need to

Name

Distance Time Graphs

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

1. Look at the following graph of Charlotte's journey.



- a. What is the total time that that Charlotte is stationary [1]
- b. In which part of the journey is she travelling the fastest? [1]
- c. What is the total distance travelled? [1]
- d. Calculate the speed she is travelling during part 'a' [1]

2. Write a suitable story to describe the above journey. [4]

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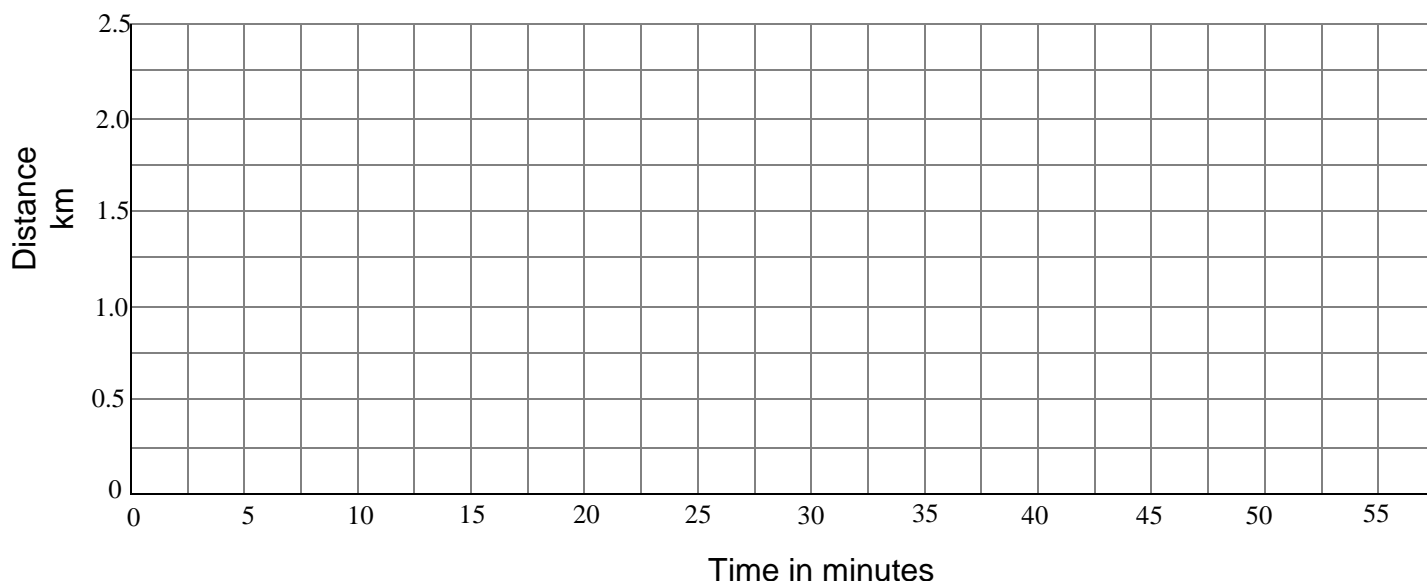
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3. Draw distance time graphs of the following, [2]

Danny leaves home and walks 1km to the Spar in 15 minutes, he stays in the shop for 5minutes. He runs the 1.25km to school in 7.5 mins, realising he's forgot his maths book he runs home in 25mins.



4. The Distance from Holyhead to Llandudno is 60 miles.

i. Ms Davies takes 2 hour what was her speed? [1]

ii. Mr Jones takes 1:30 hours to make the same journey.

What was his speed? [2]

iii. Mr Williams takes $2\frac{1}{4}$ hours What was his speed?

..... [2]

5. Kevin drove from Newcastle to Swindon, a distance of 273 miles.

He started his journey at 9:15 a.m. and arrived in Swindon at 4:15 p.m.

(a) Calculate his average speed for the journey. [3]

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On average, his car uses one gallon of diesel per 40 miles travelled.

A gallon of diesel costs approximately £6.30. Find an estimate, to the nearest £, of how much it cost him for the diesel used on the journey. [2]

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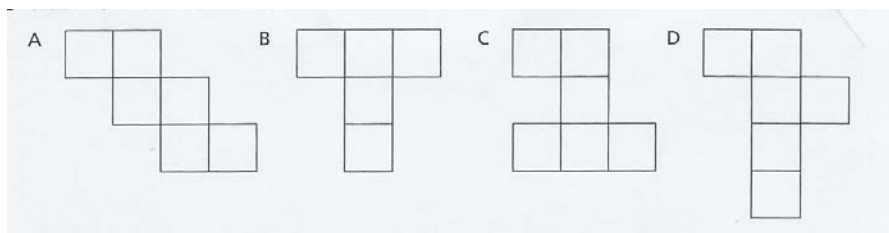
To improve I need to

Name

Nets

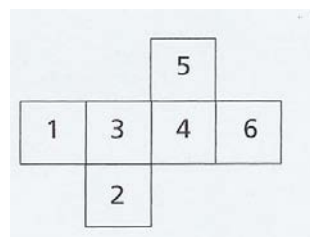
$$\frac{3}{15} \times 100 = \dots\%$$

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

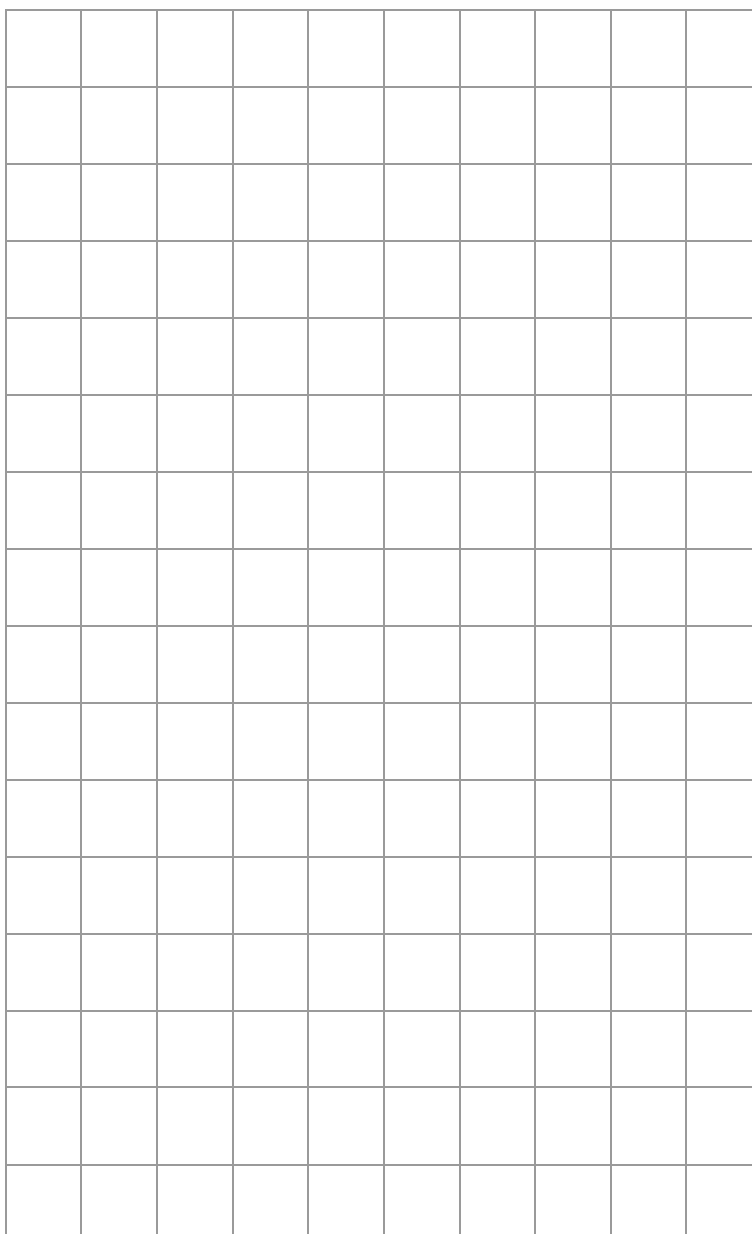
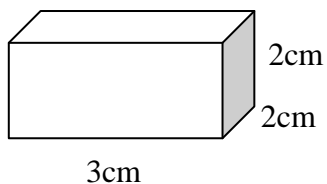


2. Imagine folding up this net to make a dice.

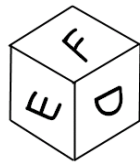
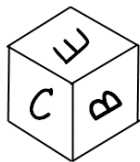
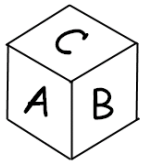
- a. Which number will be opposite the 5? [1]
- b. Which number will be opposite the 6? [1]



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

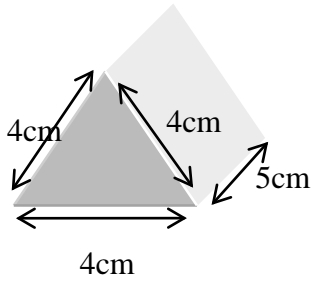


4. Here are three different views of the same cube. [3]
Which letters are opposite each other ?



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

5. This is a triangular prism. The ends of the prism are isosceles triangles. [3]
Draw an accurate full-size net for this prism



6. A pyramid has a square base with edges of length 5 cm. Each triangular face is equilateral. Sketch a net for this pyramid, label all the sides with correct measurements [3]

To improve I need to

Name

Numeracy-1

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

No working out No marks - Working out here

[8]

1. $561 \div 5$

Answer

2. $456 \div 8$

Answer

3. $327 \div 9$

Answer

4. $1568 \div 7$

Answer

5. 560 boxes are stored in a container storage. Each box contains 48 bottles. How many boxes can be filled and how many bottles are left over? [4]

Answer

6. In a sponsored walk 45 people raised a total of £3870. What was the average amount raised by each person?. Show your working.

[4]

Answer

7. Write all the multiples of 17 between 100 and 150

Answer[2]

8. The sum of two numbers is 6 and their product is -27 what the two numbers?

Answer [2]

To improve I need to

Name

Numeracy-2

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

No working out No marks - Working out her

1. Write down all the Square numbers between 100 and 300
..... [2]
2. $\sqrt{121} \times \sqrt{64}$ Answer [2]
3. $5^3 \div 1^6$ Answer [2]
4. Calculate $2 \times 4 + 12 \times 2$ Answer [2]
5. Calculate $(3 \times 2)^2 \div (12 - 3)$ Answer [2]
6. Calculate $8^2 - 10 \times 3$ Answer [2]
7. Calculate $\frac{3}{5}$ of £120 Answer [2]
8. Calculate 12% of £420 Answer [2]

CINEMA PROBLEM

A cinema has 100 seats. The tickets prices are £10 for adults 50p for pensioners

What is the minimum that the cinema's takings could be, if all 100 tickets are sold?
What is the next smallest amount that the takings could be? And the next? And the next...?

The cinema took £449 one day. Work out how many adults and how many pensioners bought tickets, if all the seats were filled.

How many different ways can you find of selling tickets so that the takings are exactly £60?
.....
.....
.....
..... [4]

To improve I need to