

Holyhead High School Ysgol Uwchradd Caergybi

Mathematics Department Homework Pack

Year 8 Module 8 Higher

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Name

Class Teacher

Name

Algebra

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

1. What do you remember from the beginning of the year
- Solve $4x + 9 = 27$ [2]
- Expand and Solve $3(x + 7) = 36$ [2]
2. The formula to change from degrees Fahrenheit to degrees Celsius [2]
- $F = C \times 9/5 + 32$ convert 37°C to Fahrenheit.
-

3. The formula for the cost of buying a bicycle on credit is



cost = monthly payment \times 9 + deposit

Find the **cost** of a bicycle, when the **monthly payment** is £15 and the **deposit** is £30. [2]

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(b) The **cost** of another bicycle is £220.

Find the **monthly payment** when the **deposit** is £40. [2]

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4. Berwyn wants to hire a car.

He sees the following advertisement.

He hires a car and his bill comes to £163.60.

Cars for hire

£35.60 in total for the first 2 days,
then £16 per day

For how many days did he hire the car? [4]

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5. a) Describe, **in words**, the rule for continuing the following sequences.

128, 64, 32, 16, Rule: [1]

b) Write down the *n*th term of the sequence 3, 7, 11, 15, [2]

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c) Write down the *n*th term of the sequence 2, 5, 10, 17, [2]

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To improve I need to

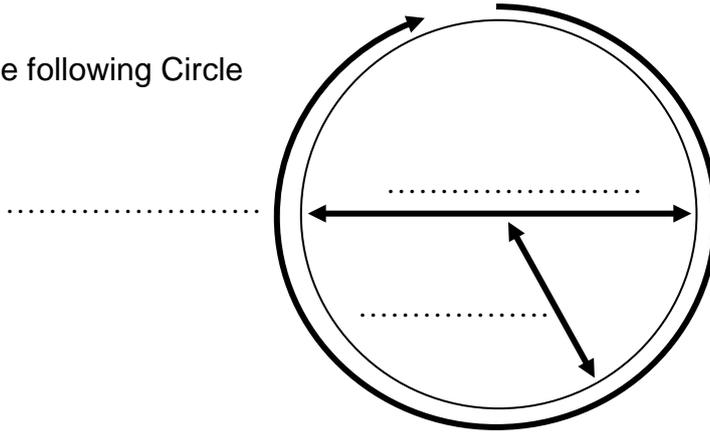
Name

Circles

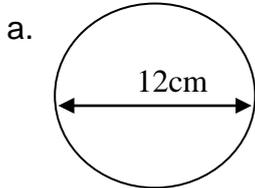
$$\frac{\dots}{25} \times 100 = \dots\%$$

1. Label the following Circle

[3]

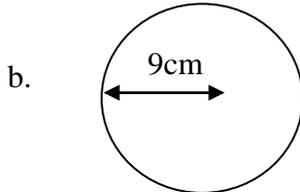


2. Calculate the **Circumference** and **Area** of the following circles (use π or 3.14)
Use the correct units



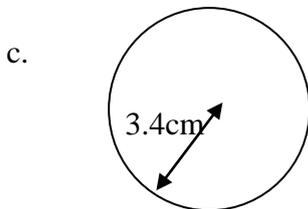
Circumference [2]

Area [2]



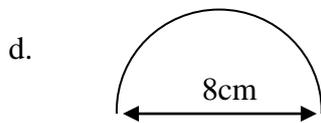
Circumference [2]

Area [2]



Circumference [2]

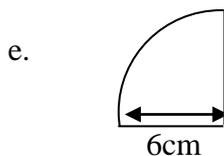
Area [2]



Circumference [2]

Area [3]

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Circumference [2]

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Area [3]

To improve I need to

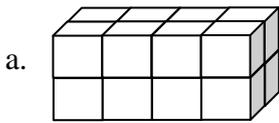
Name

Volume

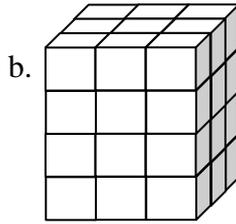
$$\frac{\dots}{15} \times 100 = \dots\%$$

6. By counting cubes calculate the volume of the following shapes

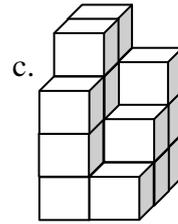
[3]



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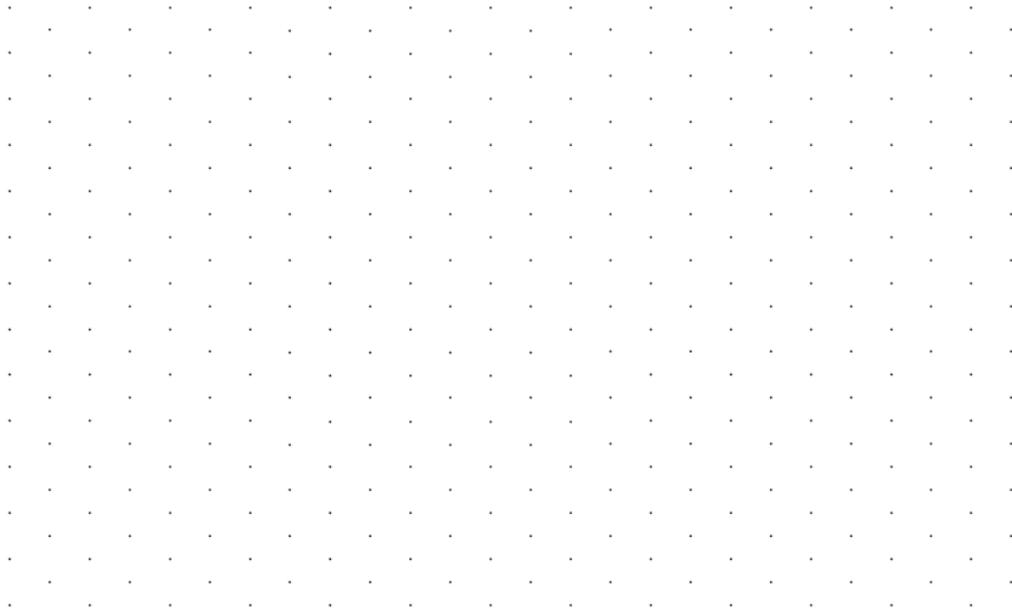
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7. Draw the following cuboids on the isometric paper

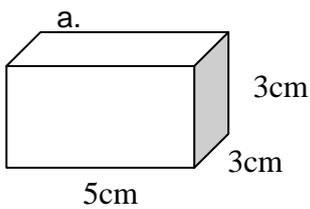
[6]

a. **3 x 3 x 3**

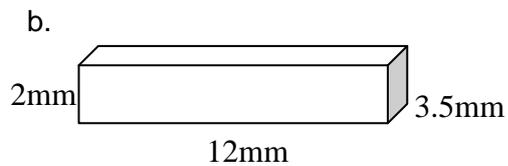
b. **2 x 4 x 4**



8. By using the correct formula calculate the volume of the following cuboids. Use the correct units [4]



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9. A cube has edges 6cm long. Find the volume [2]

10. A shoe box has a base measuring 20cm by 15cm it's **volume** is 1800cm³. [4]

What is it's height

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To improve I need to

Name

Functional

$$\frac{\dots}{16} \times 100 = \dots\%$$

1. The table shows the first class and second class postal charges for large and small letters.

	1st Class		2nd Class	
	Small Letters	Large letters	Small Letters	Large letters
0-100g	60p	90p	50p	69p
101-250g	–	£1.20	–	£1.10
251-500g	–	£1.60	–	£1.40
501-750g	–	£2.30	–	£1.90
Letters	Size (up to) Length: 24 cm, Width: 16.5 cm, Thickness: 0.5 cm Weight (up to) 100 g			
Large letters	Size (up to) Length: 35.3 cm, Width: 25 cm, Thickness: 2.5 cm Weight (up to) 750 g			

(a) Mark is going to post two large letters each weighing 230 g. He buys two 1st class stamps. How much does Mark pay altogether? [2]

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(b) Camille posts three large letters. The weights of the letters are 75 g, 400 g and 650 g. How much cheaper is it for her to use 2nd class stamps rather than 1st class stamps? [3]

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(c) Rebecca has a letter that weighs 550 g. It has length 23 cm, width 18 cm and thickness 0.7 cm. She only has two £1 coins. Does Rebecca have enough money to post her letter? You must show all your working and give a reason for your answer. [3]

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2. Helen works in a shop. Her normal working week is 35 hours. She is paid £8.74 per hour. When she works for more than 35 hours she is paid a higher amount for each extra hour she works. Here is her time-sheet for one week when she was paid a total of £358.34.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Number of hours worked	8	7	9	8	7

Work out the amount she is paid for each extra hour. You must show all your working. [8]

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4. Two people are preparing for an expedition to the South Pole.
 As part of their training they spend 3 hours in a large container in a room.
 The temperature in the container can be controlled accurately.

The temperature in the room is 18°C.

Using the following information, complete the table that shows the temperature inside the container at various times.

- When they enter the container the temperature inside is 13°C below the temperature of the room.
- After one hour the temperature in the container has decreased by a further 20°C.
- During the next hour the temperature in the container increases by 7°C.
- The temperature in the container after 3 hours is 10°C.

Time	On entry	After 1 hour	After 2 hours	After 3 hours
Temperature in the container				10°C

[3]

By how much does the temperature in the container increase during the final hour they are inside?

°C

What is the range of the temperature in the container during the 3 hours?

°C

What is the mean of the four recorded temperatures?

[5]

To improve I need to