**Year 8 – Spring Assessment 2**

**Time: 45 minutes Calculator allowed**

**Name: .................................... Maths Teacher: .........................**

**Date: ......................... Maths Class: .........................**

Answer all the questions

Read the questions carefully

Show your working

Check your answers

Mark (45)





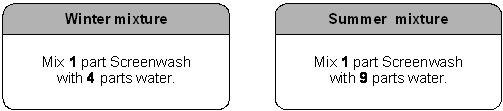
**Things I need to practise:**

**Things I did well:**

**Q1.**          **Screenwash**

          Screenwash is used to clean car windows.

To use Screenwash you mix it with water.



(a)     In **winter,** how much water should I mix with **150ml of Screenwash**?

  .......................... ml

1 mark

(b)     In **summer,** how much Screenwash should I mix with **450ml of water**?

  .......................... ml

1 mark

(c)     Is this statement correct?

|  |
| --- |
| **25%** of **winter** mixture is **Screenwash**. |

Tick () Yes or No.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | True |  |  | False |  |

Explain your answer.



1 mark

**Q2.**          **Cutting a cake**

          Ben is **10** years old.

          Cindy is **15** years old.

          Tom is **20** years old.



          They are going to cut a cake into 3 slices from the centre.

          The size of the slices will be proportional to their ages.

          What will the **angle** at the centre of **Ben’s** slice be?



..................°

2 marks

**Q3.**   (a)     One morning last summer Ravi carried out a survey of the birds in the school garden.

          He saw 5 pigeons, 20 crows, 25 seagulls and 45 sparrows.

          Complete the line below to show the ratios.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Pigeons | : | Crows | : | Seagulls | : | Sparrows |
|  | 1 | : | **...........** | : | **...........** | : | **...........** |

                                                                                                                                                     2 marks

(b)     What percentage of all the birds Ravi saw were sparrows?



..............................%

1 mark

**Q4.**          **Yoghurt**

          A dessert has both fruit and yoghurt inside.



**Altogether**, the mass of the fruit and yoghurt is **175g**.

          The **ratio** of the mass of **fruit** to the mass of **yoghurt** is **2 : 5**

          What is the mass of the yoghurt?



...................... g

2 marks

**Q5.**          **Tennis prizes**

          Each year, there is a tennis competition in Australia and another one in France.

          The table shows how much money was paid to the winner of the men’s   
competition in each country in 2002.

|  |  |
| --- | --- |
| Country | Money |
| Australia | 1000 000 Australian dollars  (£1 = 2.70 Australian dollars) |
| France | 780 000 Euros  (£1 = 1.54 Euros) |

          Which country paid **more** money?

          You **must** show your working.



          Tick () the country that paid more.

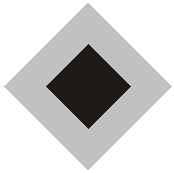
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Australia |  | France |

2 marks

**Q6.**          **Grey and black designs**

(a)     In this design, the ratio of **grey to black** is **3 : 1**

          What **percentage** of the design is black?



  ............................%

1 mark

(b)     In this design, **60%** is **grey** and the rest is black.

          What is the ratio of **grey to black**?

          Write your ratio in its simplest form.





............. : .............

2 marks

**Q7.**          Here are some exchange rates.

|  |
| --- |
| £1 = 2.03 American dollars |
| £1 = 2.15 Canadian dollars |

Use the exchange rates to answer this question.

(a)     How many **more Canadian** dollars than American dollars would you get for £250?



|  |
| --- |
| dollars |

2 marks

(b)     How many **more pounds (£)** would you get for 250 American dollars than for 250 Canadian dollars?

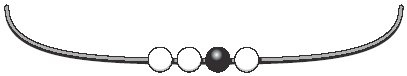


|  |
| --- |
| £ |

2 marks

**Q8.**          **Ratio**

(a)     On this necklace the ratio of black beads to white beads is **1 : 3**

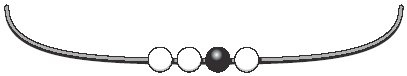
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          How many **more** black beads do you need to add to make the  
ratio of black to white **3 : 1**?

 ................... black beads

1 mark

(b)     Here is the necklace again.



          How many **more** black beads and white beads do you need to add to make the ratio of black to white **3 : 2**?

 ....................... black beads, ....................... white beads

1 mark

**Q9.**          **Red and blue cubes**

          In a bag, there are **red** and **blue** cubes in the ratio **4 : 7**



          I add **10 more red cubes** to the bag.

          Now there are **red** and **blue** cubes in the ratio **6 : 7**



          How many **blue** cubes are in the bag?



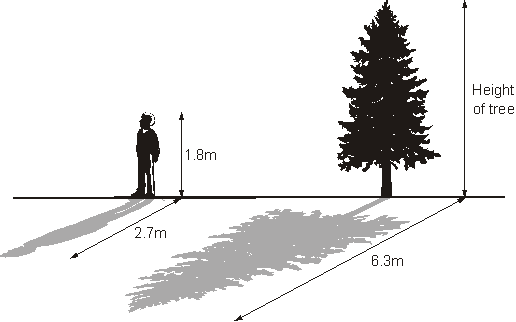
...................

2 marks

**Q10.**          **Shadows**

          Tom’s height is 1.8m.

          He stands near a tree.



Not drawn accurately

          At 4pm, the length of Tom’s shadow is 2.7m.

          At 4pm, the length of the tree’s shadow is 6.3m.

          What is the height of the tree?



|  |
| --- |
| m |

2 marks

**Q11.**          **Best buy**

          You can buy jars of the same jam in two sizes.

  
454g for £1.59                                         340g for £1.25

          Which jar is better value for money?

          You **must** show working to explain your answer.



          Tick () your answer.

               A                  B

2 marks

**Q12.**          **Juice**

          The table shows a recipe for a fruit drink.

|  |  |
| --- | --- |
| Type of juice | Amount |
| Orange | litre |
| Cranberry | litre |
| Grape | litre |
|  | Total 1 litre |

          I want to make **1litres** of the same drink.

          Complete the table below to show how much of each type of juice to use.

          Show your working.



|  |  |
| --- | --- |
| Type of juice | Amount |
| Orange | litre |
| Cranberry | litre |
| Grape | litre |
|  | Total 1 litres |

2 marks

**Q13.**          **Centenarians**

          People who live to be 100 years old are called centenarians.

          In 1998 there were **135 000** centenarians.

          The **ratio** of **male** to **female** was **1 : 4**

          How many **female** centenarians were there in 1998?

          Show your working.



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

2 marks

**Q14.**          **Oranges and lemons**

          Ifill a glass with orange juice and lemonade in the ratio **1** : **4**

          Idrink  of the contents of the glass, then I fill the glass using orange juice.

Now what is the ratio of orange juice to lemonade in the glass?

Show your working, and write the ratio in its simplest form.

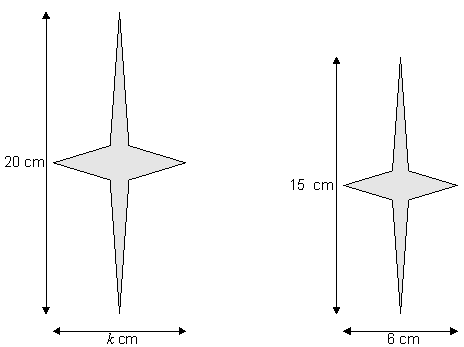


............... **:** ...............

3 marks

**Q15.**          **Star shapes**

          The diagram shows two shapes that are mathematically similar.



(a)     What is the value of *k*?

  ..............................

1 mark

(b)     I want to draw another shape that is mathematically similar to the ones in the diagram, but of a different size.

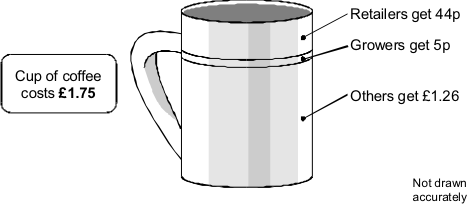
          Give the length and width of a shape I could draw.

 length .............................. cm                width .............................. cm

1 mark

**Q16.**          **Coffee**

          A cup of coffee costs £1.75  
The diagram shows how much money different people get when you buy a cup of coffee.



(a)     Complete the table to show what **percentage** of the cost of a cup of coffee goes to retailers, growers and others.

          Show your working.



|  |  |
| --- | --- |
| Retailers | % |
| Growers | % |
| Others | % |

**2 marks**

(b)     Some people think the growers should get more.  
Suppose the percentages change to:

|  |  |
| --- | --- |
| Retailers | 23% |
| Growers | 10% |
| Others | 67% |

          Suppose the **retailers** still got **44p** from each cup of coffee sold.  
How much would a cup of coffee cost?  
Show your working.



|  |
| --- |
| £ |

**2 marks**

**Q17.**          **Sale**

|  |  |
| --- | --- |
| A shop had a sale. All prices were reduced by 15% |  |

          A pair of shoes cost **£38.25** in the sale.

          What price were the shoes before the sale?

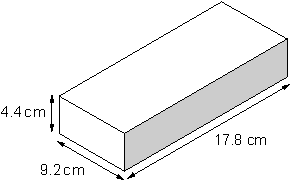
          Show your working.



|  |
| --- |
| £ |

2 marks

**Q18.**          Here are the dimensions of a solid gold bar.



Use the information below to calculate how much this gold bar is worth in British pounds (£).

•        The gold bar is a cuboid.

•        The density of gold is 19.3 grams per cm3

•        1 ounce is 28.35 grams.

•        The price of gold is 670 US dollars per ounce.

•        1 US dollar is 0.508 British pounds.



|  |
| --- |
| £ |

3 marks