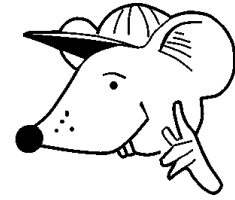


# **MATHEMATICS**



**NCT Practice Paper No: 4**

**Key Stage 2**

**Levels 3 - 5**

**Test B**

**Calculator Allowed**

# **MathSphere**

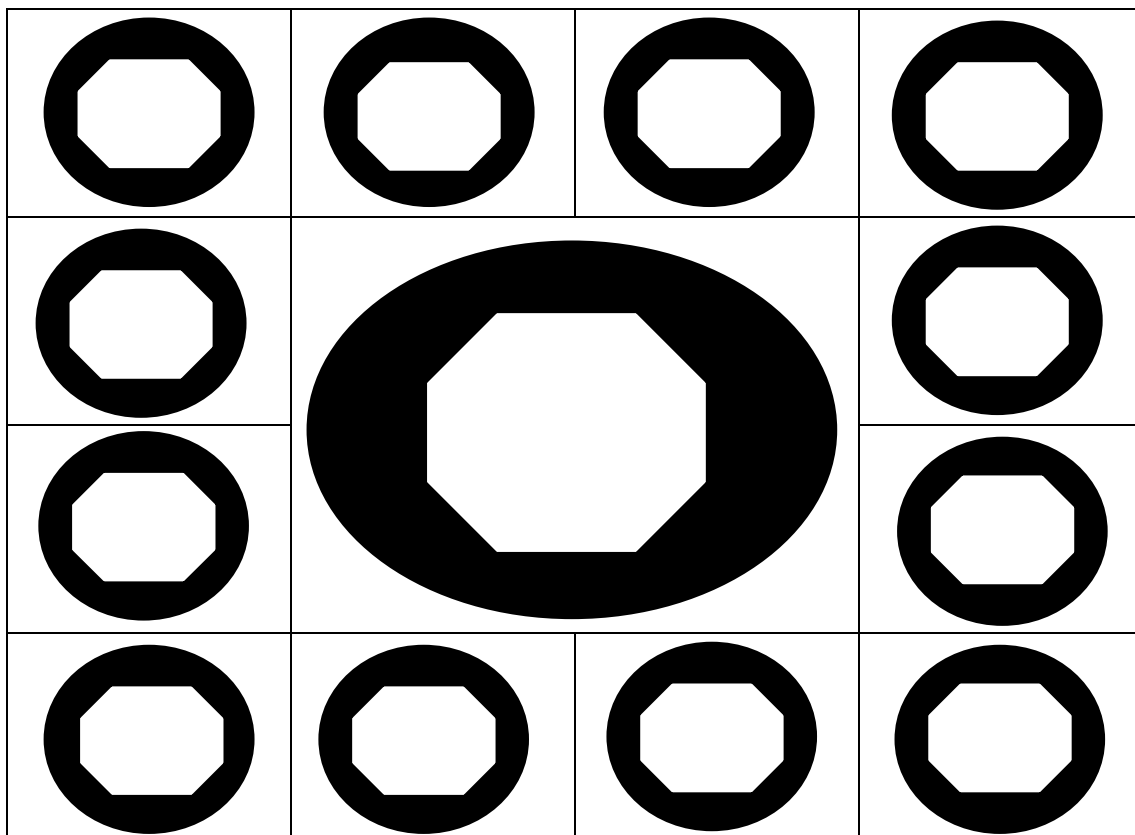
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**MATHEMATICS**

Key Stage 2

**TEST B** Levels 3 - 5**Calculator Allowed**

Page	Marks	Page	Marks
4		10	
5		11	
6		12	
7		13	
8		14	
9			
<b>TOTAL</b>			

**First Name****Last Name****Name of School**

# INSTRUCTIONS

If you wish you **may** use a calculator to answer the questions.

Always work as quickly as you can.

**Do not waste time on one question.** Go on to another question if you find one difficult.

**Always check your work if you have time at the end.**

Time allowed for this test: **45 minutes.**

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**A large box like this means you must show your working:**

**Show your working**



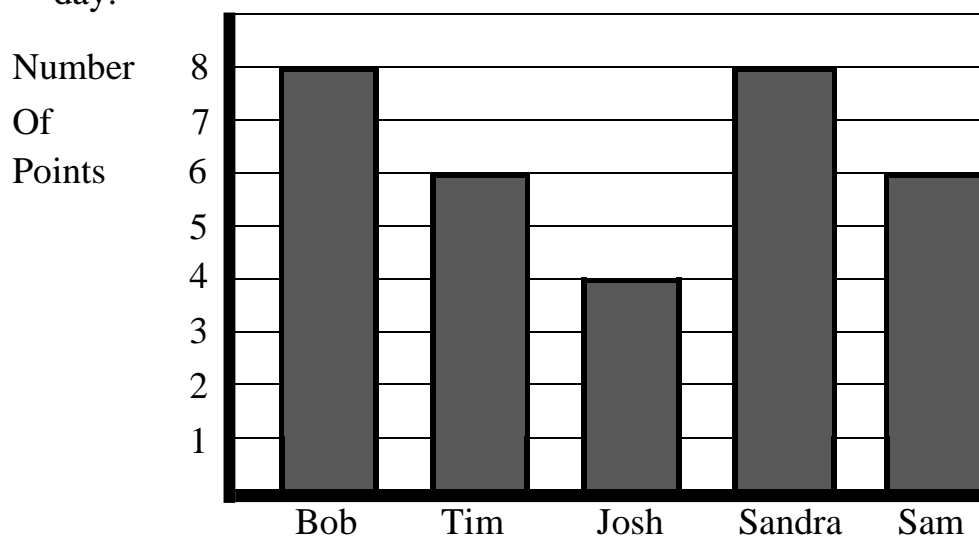
1. Write what the **two missing numbers** might be.

$$\boxed{\phantom{00}} + 56 - \boxed{\phantom{00}} = 72$$

2. Fill in some **missing numbers** in the boxes to make this true.

$$87 + \boxed{\phantom{00}} - \boxed{\phantom{00}} = 66$$

3. This graph shows how many points were won by five children in one day.



Which **child** received the **least** number of points?

What is the total number of points received by all the children on that day?

4. Kung-Fud chocolate bars are packed in boxes of 10. The table shows the number of boxes needed to pack them.

Number of Kung-Fud bars	Number of Boxes Needed
Up to 10	1 box
Up to 20	2 boxes
Up to 30	3 boxes
Up to 40	4 boxes
Up to 50	5 boxes

How many boxes are needed for **34 Kung-Fud bars**?

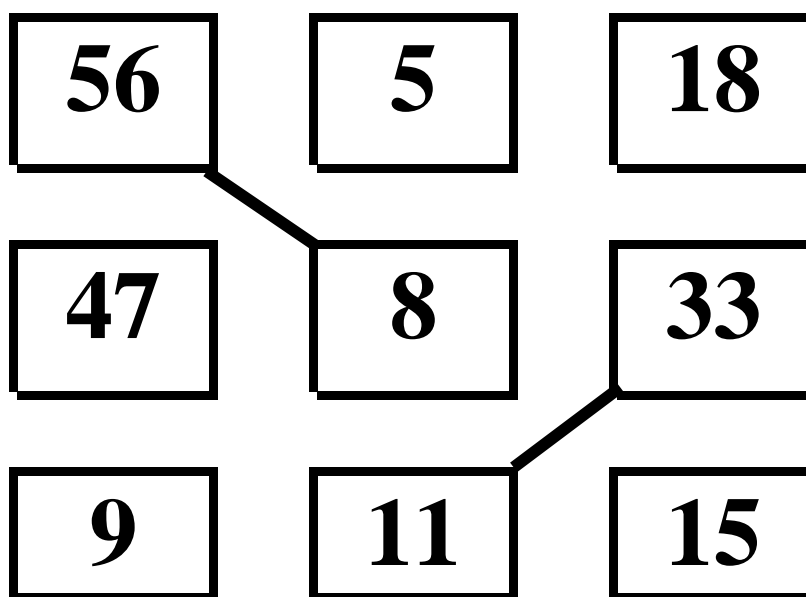
Joanne says that 2 boxes are needed to pack 27 Kung-Fud bars.  
Explain why this is wrong.

---

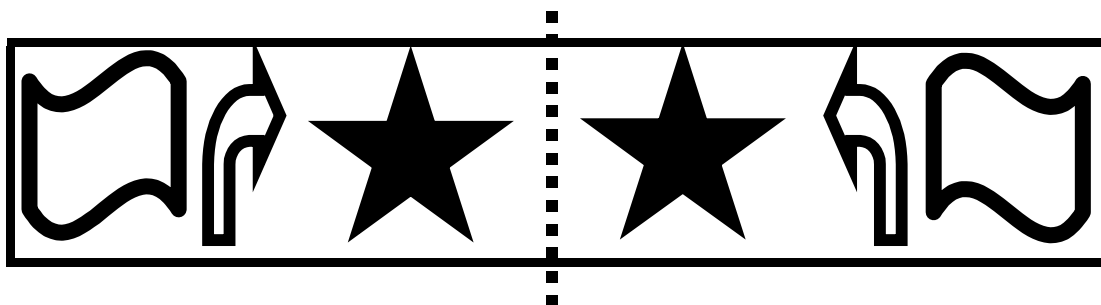
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5. In the diagram numbers are joined together if one is a factor of the other.

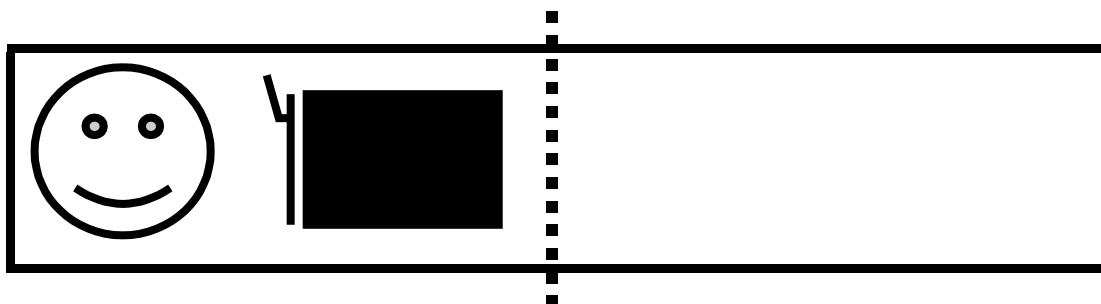
Connect one more number to its factor.



6. These shapes are symmetrical about the dotted line.



Complete **this** picture so that the shapes are symmetrical about the dotted line.



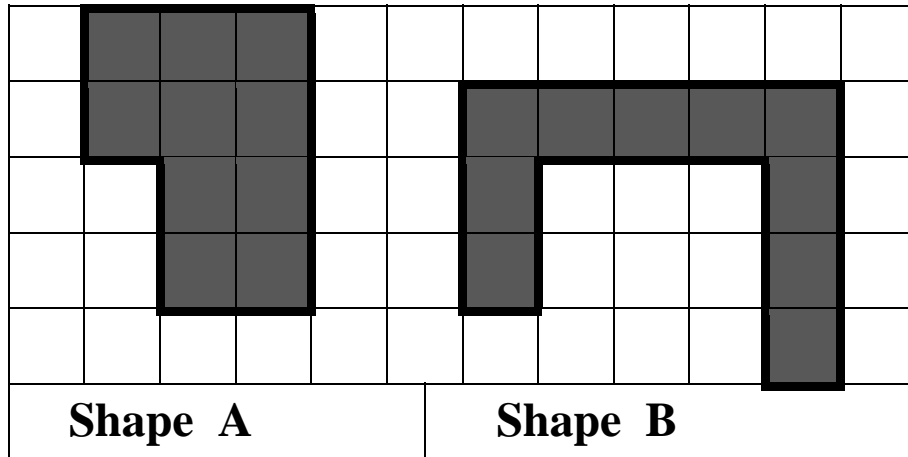
7.



Subby wants to make new waistcoats for friends and buys **6 pieces** of material **each 1.85 metres** long. How much is this altogether?

Show your working

8. Here are two shapes drawn on a grid.

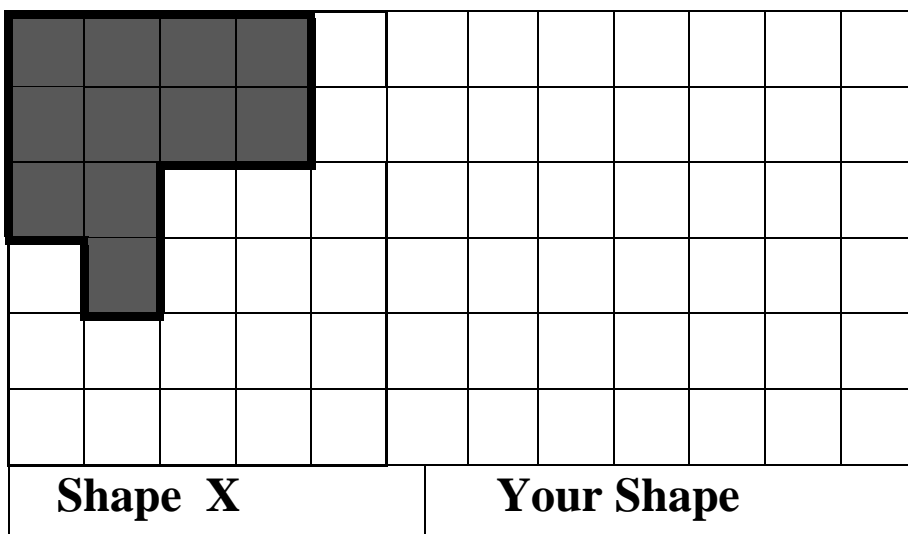


What are the **perimeters** of the two shapes?

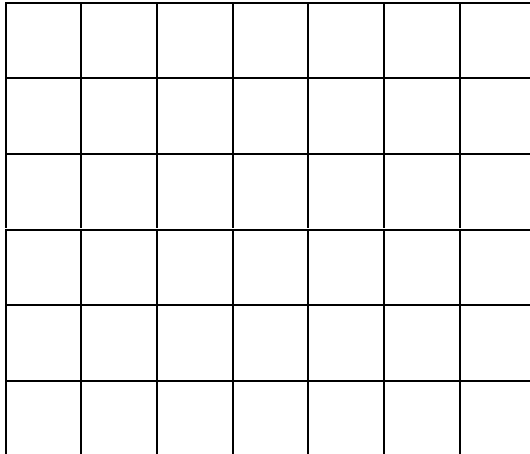
Shape A

Shape B

On this grid draw a **different** shape. Make sure it has the **same perimeter** as shape X.



9. Draw a **quadrilateral** on the grid. It must have **pairs of opposite sides the same length** and **no right angles**.



What is your shape called?

10. Here is a sequence of numbers. The rule is:

**'double the number and subtract 5'**

Put the **next number** in the box.

**8**  $\Rightarrow$  **11**  $\Rightarrow$  **17**  $\Rightarrow$

What is the rule for this sequence?

**10**  $\Rightarrow$  **30**  $\Rightarrow$  **70**  $\Rightarrow$  **150**

- 
11. What is **38 squared** plus **7.2** ?



**12.** Put the **same number in each box** to make this statement true.

$$\boxed{\phantom{000}} \times 8 + \boxed{\phantom{000}} = 54$$

**13.** Put in the missing digit so that the sum

$$8 \boxed{\phantom{00}} 7 \div 7 \text{ has no remainder.}$$

**14.** Here is a sequence of patterns made from matchsticks.



**Pattern 1**



**Pattern 2**



**Pattern 3**



**Pattern 4**



**Pattern 5**

How many matchsticks are there in **pattern 3**?

How many matchsticks will there be in **pattern 10**?

If **m** is the number of the pattern, how many matchsticks will there be in **pattern m** ?

- 15.** Three sacks of potatoes had an average weight of 35Kg. One sack weighed 37 Kg. Another weighed 39Kg.  
What was the **total weight of all three sacks?**

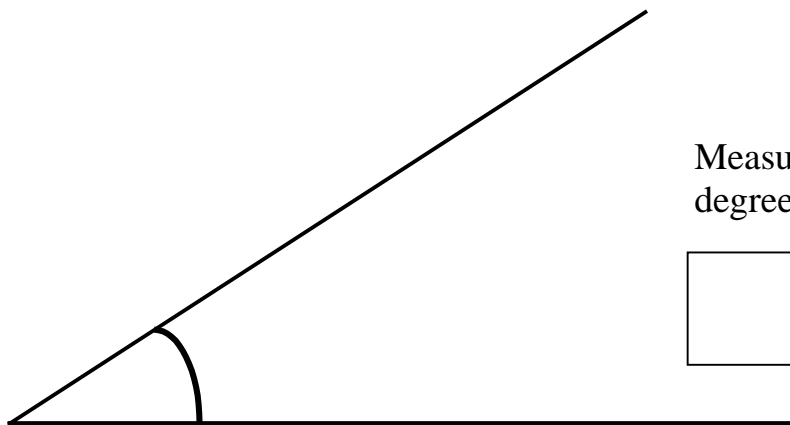
**Show your working**

What did the third sack weigh?

Another sack weighing 39 Kg was put with the others. What was the average weight of all four sacks?

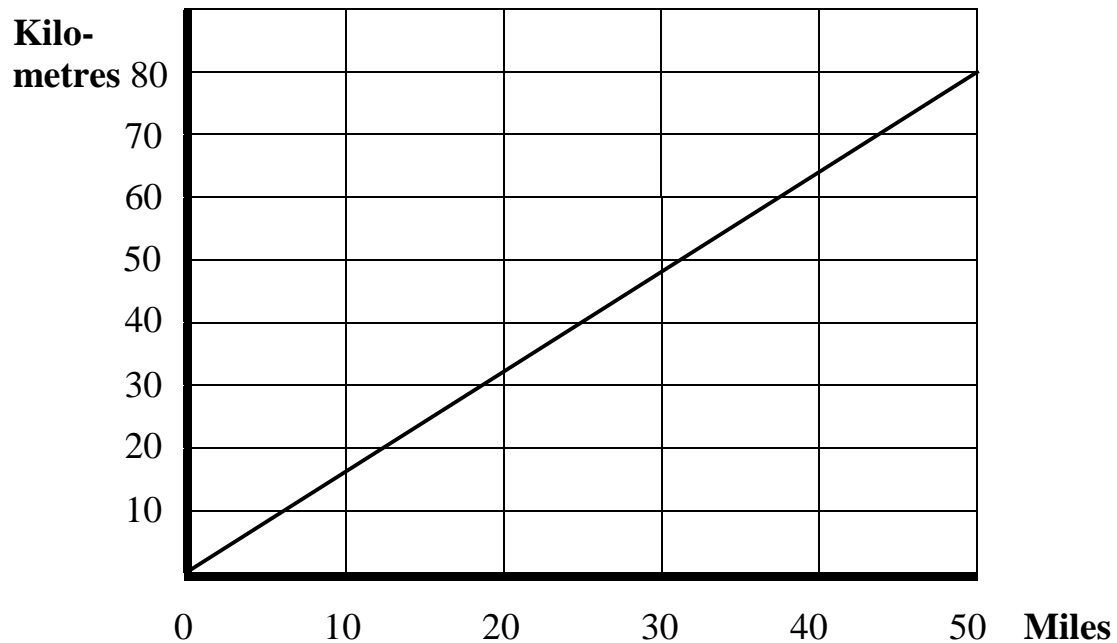
**Show your working**

**16.**



Measure this angle in degrees.

**17.** This graph shows how to convert **miles** to **kilometres**.



How many kilometres make 25 miles?

A cyclist travels 80 kilometres in 5 hours. What was his average speed in **miles per hour**?

**Show your working**

**18.** Write numbers in the empty boxes to give equivalent fractions.

$$\frac{\boxed{3}}{\boxed{\phantom{00}}} = \frac{\boxed{\phantom{00}}}{\boxed{24}}$$

Complete the table below. The first row has been done for you.

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.50	50%
$\frac{3}{4}$	0.75	
	0.20	
		10%

- 19.** To make concrete a builder uses 1 part cement, 7 parts gravel and 3 parts water. To make the concrete foundation for a house he needed 3.5 cubic metres of gravel. How much **water** did he need?

**Show your working**

Cu. metres

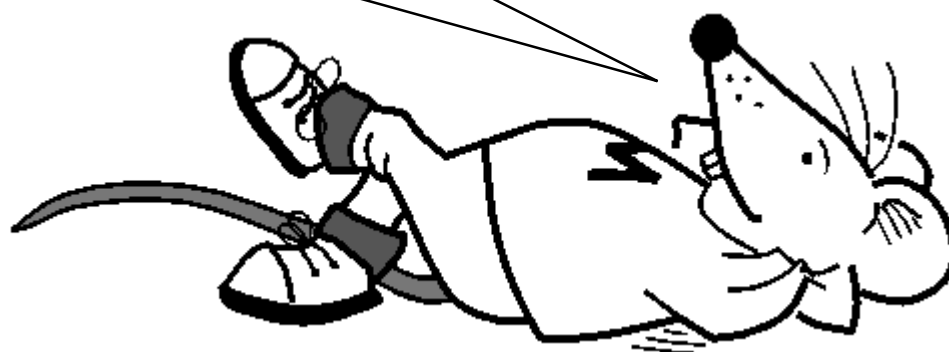
- 20.** A driver of a large crane charges £20 to take his crane to a building site and £2 for every tonne he has to lift. Write a formula to calculate how much he charges if:

**t** is the number of tonnes.

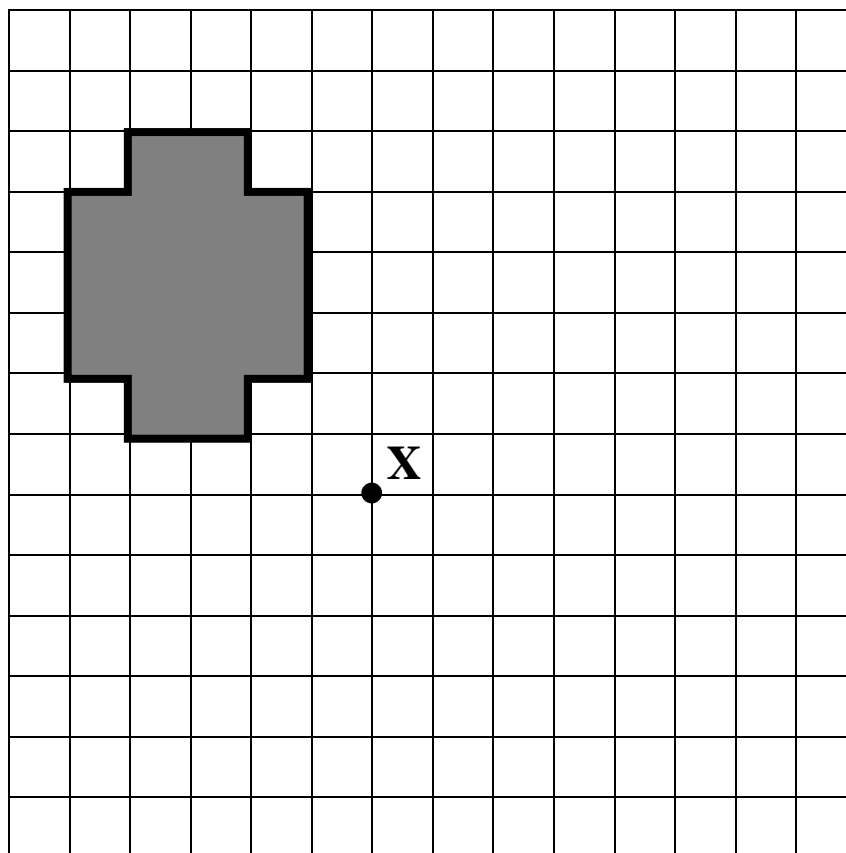
**C** is the complete cost **in pounds**.

**C =**

You cannot afford to take this lying down! Not long now, though!



21.



**Rotate** the grey shape **90°** clockwise about the point **X**. Draw the new shape on the grid.

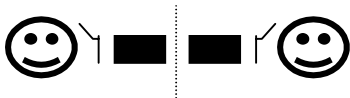
You may use tracing paper or an angle measurer if you wish.

*End of Test.*



Do not forget to check your work carefully, please!

# Answers

Answer	Mark	Answer	Mark
1. First No. – second No. should equal 16.	1	12. 6 in each box	1
2. First No. – second No. should equal –21.	1	13. 4	1
3. a) Josh (not 4!). b) 32 points.	1 2	14. a) 7 b) 21 c) 2m + 1 or equivalent.	1 1 1
4. a) 4 b) Two boxes is only enough for 20 bars. Seven bars would be left over.	1 2	15. a) Showing 35 x 3. Answer of 105 Kg. b) 29 Kg.  c) 105 + 39 = 144 Showing 144 ÷ 4 Answer 36 Kg.	1 1 1  1 1 1
5. 5 with 15 OR 9 with 18	1	16. 33° ± 2°	1
6. 	1 1	17. a)40 Km b)80 Km = 50 Miles Showing 50 ÷ 10 Answer 10 mph.	1 1 1 1
7. 1.85 x 6 Answer = 11.10 metres (units not necessary)	1 1	18. a)Giving equivalent fractions.  b) 75% 2/10 (1/5) 20% 1/10 0.10	2  1 2 2
8. a) Shape A is 14 units. b) Shape B is 22 units. c) Any shape with 16 units perimeter.	1  1	19. Correct working. Answer 1.5 cubic metres.	1 1
9. Shape fits definition. Parallelogram.	1 1	20. C = 2t + 20	2
10. a) 29 b) Double and add 10.	1 1	21. Correct position Correct orientation Clockwise rotation.	1 1 1
11. 1451.2	1	TOTAL	50