



## Mixed Puzzles

---



26 minutes



26 marks

---

**Q1.** Complete this sentence.

Every number with a factor of **10** must also have factors of



and  and

1 mark

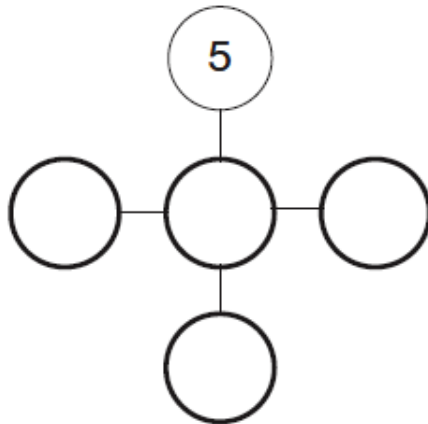
**Q2.** Here are five number discs.



Look at the cross pattern below.

Use each disc **once** so that the total across is the same as the total down.

One has been done for you.



1 mark

**Q3.** The factor pairs of 8 are

and

and

Write all the factor pairs of 42

and

and

and

and

2 marks

**Q4.** Write the missing digits to make the addition correct.

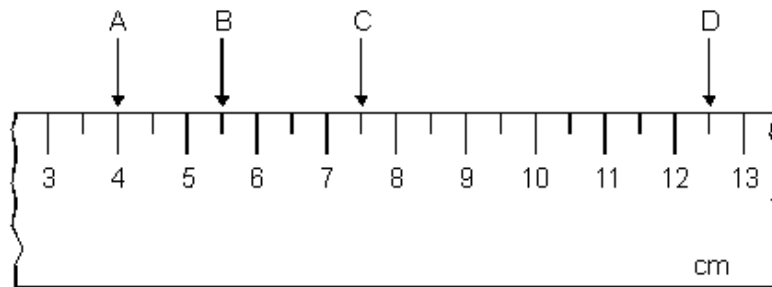


$$\begin{array}{r} \begin{array}{|c|c|c|} \hline 1 & & 1 \\ \hline \end{array} \\ + \begin{array}{|c|c|c|} \hline & 1 & \\ \hline \end{array} \\ \hline \begin{array}{|c|c|c|} \hline 9 & 0 & 0 \\ \hline \end{array} \end{array}$$


1 mark

**Q5. Ruler**

- (a) The diagram shows part of a ruler.



Complete these sentences.

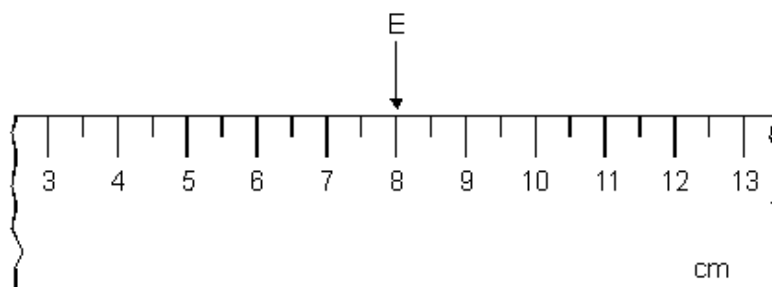
 The distance between **A** and **B** is..... cm.

1 mark

The distance between **C** and **D** is ..... cm.

1 mark

- (b) Look at the ruler below.



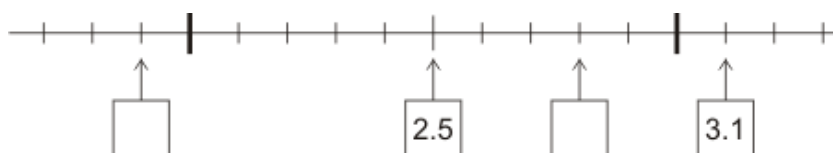
I want the distance between E and F to be  $3\frac{1}{2}$  cm.

There are **two places** F could be.

Show the two places by drawing arrows on the ruler.

2 marks

**Q6. Write the missing numbers in the boxes**



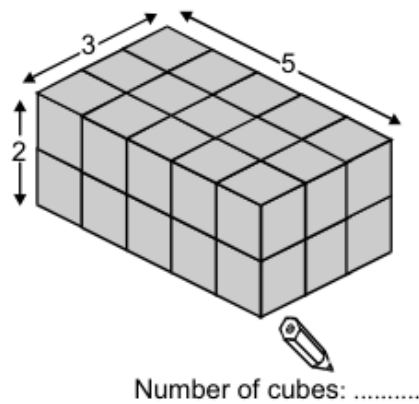
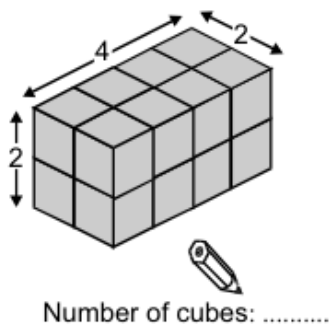
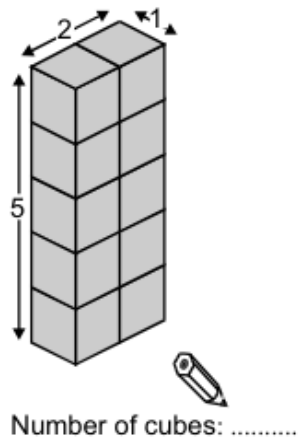
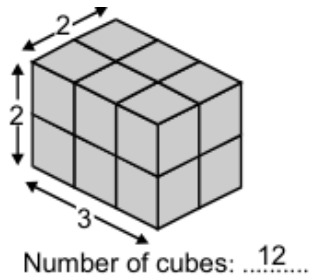
2 marks

**Q7. Cuboids**

- (a) These cuboids are made from small cubes.

Write **how many small cubes** there are in each cuboid.

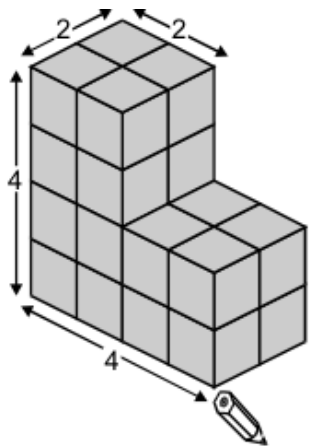
The first is done for you.



3 marks

(b) This shape is made with two cuboids.

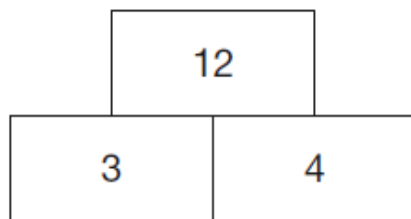
Write **how many small cubes** there are in this shape.



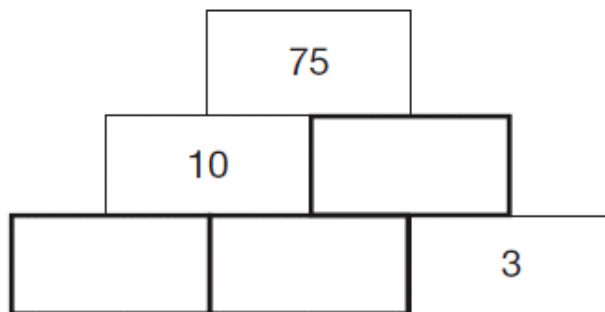
Number of cubes: .....

1 mark

**Q8.** In this tower, two numbers are **multiplied** to give the number above.



Write the missing numbers in the tower below to make it correct.



2 marks

**Q9.** Here are three digit cards

1	5	6
---	---	---

Choose two cards each time to make the following two-digit numbers.

The first one is done for you.

an even number

5	6
---	---

a prime number

--	--

a common factor of 60 and 90

--	--

a common multiple of 5 and 13

--	--

2 marks

**Q10.** Write the missing numbers.

$$\begin{array}{r}
 \square 317 \\
 \times \quad 3\square \\
 \hline
 11585 \\
 69510 \\
 \hline
 81095
 \end{array}$$

2 marks

**Q11.** (a) Here are five number cards.

Write the missing number so that the **mean** is 2.



1	4	1	1	
---	---	---	---	--

1 mark

(b) Here are the five number cards again.

1	4	1	1	
---	---	---	---	--

It is **not possible** to write the missing number so that the **range** is 2.

Explain why not.



1 mark

**Q12.** Put these values in order with the smallest first

$5^2$	$3^2$	$3^3$	$2^3$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
smallest			largest

1 mark

**Q13.** Here are three equations.

$$a + b + c = 30$$

$$a + b = 24$$

$$b + c = 14$$



What are the values of  $a$ ,  $b$  and  $c$  ?



$a =$    $b =$    $c =$

2 marks

