

## Mark scheme

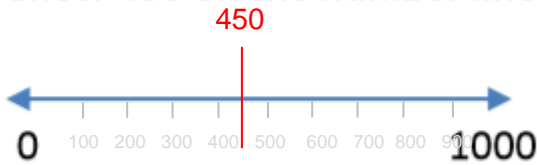
1.	701	[1]	11.	18	[1]
2.	221	[1]	12.	398	[1]
3.	15	[1]	13.	9	[1]
4.	7	[1]	14.	6	[1]
5.	805	[1]	15.	212	[1]
6.	470	[1]	16.	58	[1]
7.	$\frac{4}{5}$	[1]	17.	460	[1]
8.	72	[1]	18.	189	[1]
9.	401	[1]	19.	8	[1]
10.	703	[1]	20.	6	[1]

# Maths Reasoning Answers

## Place Value

1)

Show 450 on the number line.



2)

Using four counters and the place value grid below, how many different numbers can you make?

E.g. 211

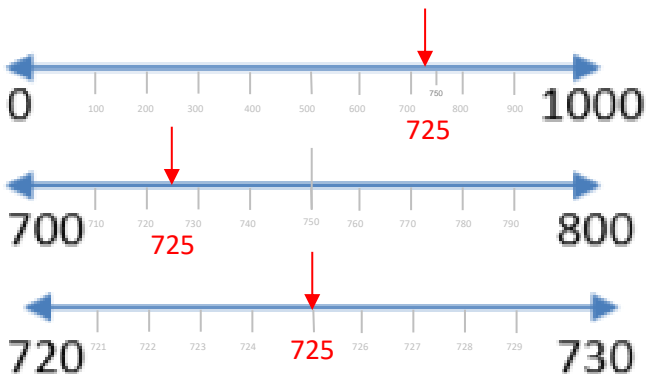
100s	10s	1s
● ●	●	●

You can make 10 different numbers:

- 400
- 310
- 301
- 211
- 220
- 202
- 103
- 130
- 121
- 112

3)

Place 725 on each of the number lines below.



No, they do not look similar because the range of numbers is different on each number line.

Do they look similar? Why?

## Addition and Subtraction

4)

Dan saved £342 in his bank account.  
He spent £282. Does the subtraction below show how much he has left?  
Explain your answer.

$$\text{£}342 - \text{£}282 = \text{£}60$$

$$\text{£}342 - \text{£}282 = \text{£}60$$

Yes, this calculation shows how much he has left.

$$\begin{array}{r} 200 \\ \cancel{300} + 140 + 2 \\ - \quad \underline{200 + 80 + 2} \\ \quad \underline{0 + 60 + 0} \end{array}$$

5) From the start number, add 5, 50 and 500.

Fill in the missing numbers.

Start	Add 5	Add 50	Add 500
342			
	322		
		246	

NOTE: The 5, 50 and 500 have been added to the start number NOT to the previous number.

Start	Add 5	Add 50	Add 500
342	347	392	842
317	322	367	817
196	201	246	696

6)

Harry has 357 stickers, John has 263.  
How many do they have altogether?  
If Harry gives John 83 stickers, how many do they have each now?

**Part A:**  $357 + 263 = 620$  stickers.

Harry and John have 620 stickers altogether.

**Part B:**

Harry:  $357 - 83 = 274$  stickers. Harry has 274 stickers left.

John:  $263 + 83 = 346$  sticker. John now has 346 stickers.

7)

Find the missing number.

200		
29	96	75

$$200 - 75 \text{ then } - 29 = ?$$

$$200 - 75 = 125$$

$$125 - 29 = 96$$

Check using the inverse:

$$75 + 29 + 96 = 200$$

8)

Mary buys these two items.



19p



16p

$$19p + 16p = 35p \text{ spent in total.}$$

$$50p - 35p = 15p \text{ change.}$$

Yes, she has been given the correct change as 10p and 5p make 15p in total.

She pays with a 50p coin and is given a 10p and 5p coin as change.

Has she been given the correct change?

## Multiplication and Division

9)

Shakira buys 8 boxes of cupcakes. There are 4 cupcakes in each box. How many cupcakes does she buy altogether?

$$8 \times 4 = 32 \text{ cupcakes}$$

10)

What is wrong with this division sentence?

$4 \div 10 = 40$

Can you correct it?

Freya says that the four times tables can help her with the eight times tables. Is she correct? Convince me.

True or false? Explain why.

Sal says that  $9 \times 4$  can be done by doing  $40 - 4$ .

You cannot begin with 4 then divide it into groups of 10 and have whole groups as the answer.

The correct calculation is  $40 \div 4 = 10$  or  $40 \div 10 = 4$

Yes, the 4 times table can help with the 8 times table because 8 is double 4.

$2 \times 8 = 16$  which is double the answer of  $2 \times 4 = 8$   
 $3 \times 8 = 24$  which is double the answer of  $3 \times 4 = 12$   
 $4 \times 8 = 32$  which is double the answer of  $4 \times 4 = 16$

True. When finding nine lots of a number, it is easier to start with the answer for ten lots of the number and remove the number you are multiplying by.

For example:  $9 \times 4$      $10 \times 4 = 40$  then  $40 - 4 = 36$   
 $9 \times 3$      $10 \times 3 = 30$  then  $30 - 3 = 27$   
 $9 \times 8$      $10 \times 8 = 80$  then  $80 - 8 = 72$

11)

There are 48 cookies in a pack. How many ways can you share them out? Draw a picture to show your working out.

There are 7 different ways shown below as a bar model.

48	
24	24
○○○○○○○○○○	○○○○○○○○○○
○○○○○○○○○○	○○○○○○○○○○
○○○○	○○○○

$48 \div 2 = 24$

48		
16	16	16
○○○○○	○○○○○	○○○○○
○○○○○	○○○○○	○○○○○
○○○○○	○○○○○	○○○○○
○	○	○

$48 \div 3 = 16$

48			
12	12	12	12
○○○○○	○○○○○	○○○○○	○○○○○
○○○○○	○○○○○	○○○○○	○○○○○
○○	○○	○○	○○

$48 \div 4 = 12$

48					
8	8	8	8	8	8
○○○	○○○	○○○	○○○	○○○	○○○
○○○	○○○	○○○	○○○	○○○	○○○
○○	○○	○○	○○	○○	○○

$48 \div 6 = 8$

48							
6	6	6	6	6	6	6	6
○○	○○	○○	○○	○○	○○	○○	○○
○○	○○	○○	○○	○○	○○	○○	○○
○○	○○	○○	○○	○○	○○	○○	○○

$48 \div 8 = 6$

48											
4	4	4	4	4	4	4	4	4	4	4	4
○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○

$48 \div 12 = 4$

48																			
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

$48 \div 24 = 2$

12)

12 buns are shared between 3 boys. 16 buns are shared between 4 girls. Who gets more buns, boys or girls? Explain your answer.

12 buns		
4	4	4

Boys get 4 buns each.

16 buns			
4	4	4	4

Girls get 4 buns each.

The boys and girls have the same number of buns each. They both get 4 buns.

Both  $12 \div 3$  and  $16 \div 4$  give the same number.

13)

Sasha needs 40 points to buy a football.

Blue counters are worth 3 points and green counters are worth 4 points.

In a game she wins



Does she have enough?

Explain why.

No, Sasha does not have enough points for a football.

Blue tokens: 6 tokens worth 3 points each is  $6 \times 3 = 18$  points

Green tokens: 3 tokens worth 4 points each is  $3 \times 4 = 12$  points

$18 \text{ points} + 12 \text{ points} = 30 \text{ points in total.}$

Sasha needs 10 more points to buy a football.

## FRIDAY MATHS ANSWERS

### Dip and Pick 11

15 children like cricket best.

15 children like cricket best.  
20 children liked rugby best but half of these changed their minds.  
This means 10 of them now like cricket.  $15 + 10 = 25$ .  
25 children now like cricket best.

Yes he is correct.

Netball = 25 children.  
Basketball = 5 children.

Five times 5 children = 25.

So netball is 5 times more popular than basketball.

25 chose netball as their favourite sport.

Girls	Boys
10	15
12	13
14	11
16	9
18	7
20	5

## BITESIZE FRIDAY CHALLENGES

### Challenge 1

This is half of Lee's strawberries.

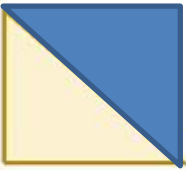


4 strawberries + 4 strawberries =

**8 strawberries**

How many strawberries does Lee have?

This is half of Lee's shape.



What could the whole shape look like?

### Challenge 2

Tim buys a lolly and a chew.



The lolly costs 12p more than the chew.

The total cost of the two items is 82p.

How much does the lolly cost?

- Start with the total then take away the 12p more.

$$82p - 12p = 70p$$

- Divide the 70p in half between the lolly and the chew.

$$70p \div 2 = 35p$$

The chew costs 35p.

- Add the 12p to the other 35p.

$$35p + 12p = 47p$$

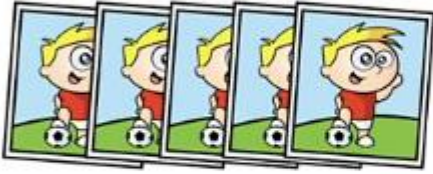
**The lolly costs 47p**



## Challenge 3

Stickers come in packs of 5.

Max buys 12 packs.



He gave his three friends some stickers.

They each receive the same number.

He has 27 stickers left.

How many stickers did Max give each of his friends?

Max buys 12 packs of 5 stickers.

$$12 \times 5 = 60 \text{ stickers}$$

He gives away some and has 27 left.

$$60 - ? = 27$$

Solve this by either;

$$27 + 33 = 60 \text{ or } 60 - 27 = 33$$

He gives away 33 to his 3 friends.

They get the same amount each.

$$33 \div 3 = 11$$

**The friends get 11 stickers each.**

## Challenge 4

Here are 3 containers.



- The jug can hold **1500 ml**.
- The bucket can hold **2 litres**.
- The barrel can hold **15 litres**.

Anisa wants to fill the barrel with water.

Find 2 ways that Anisa can fill the barrel using the jug and bucket.

She needs 15 litres of water to fill the barrel.

She can use:

**6 buckets** ( $6 \times 2 \text{ litres} = 12 \text{ litres}$ )

**2 jugs** ( $2 \times 1.5 \text{ litres} = 3 \text{ litres}$ )

$$12 + 3 = 15 \text{ litres.}$$

or

**3 buckets** ( $3 \times 2 \text{ litres} = 6 \text{ litres}$ )

**6 jugs** ( $6 \times 1.5 \text{ litres} = 9 \text{ litres}$ )

$$6 + 9 = 15 \text{ litres.}$$