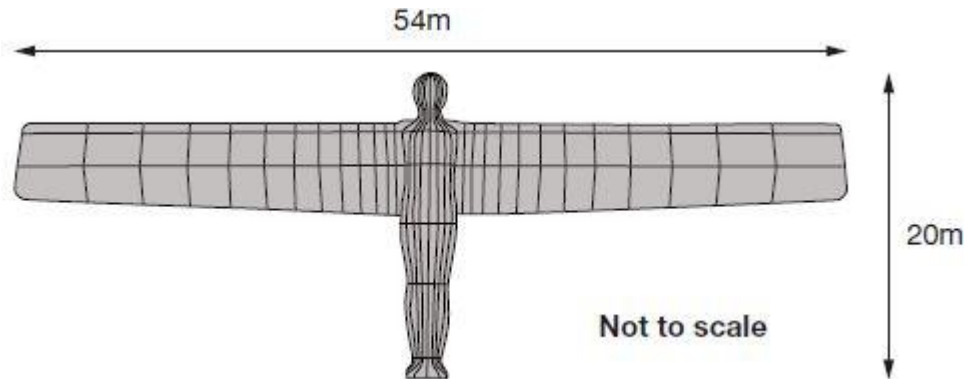


**Q1.**

The Angel of the North is a large statue in England.

It is 20 metres tall and 54 metres wide.



Ally makes a scale model of the Angel of the North.

Her model is 40 centimetres tall.

How **wide** is her model?

1 mark

**Q2.**

This table shows the areas of the United Kingdom and Jamaica.

Country	Area (square kilometres)
United Kingdom	240,000
Jamaica	10,000

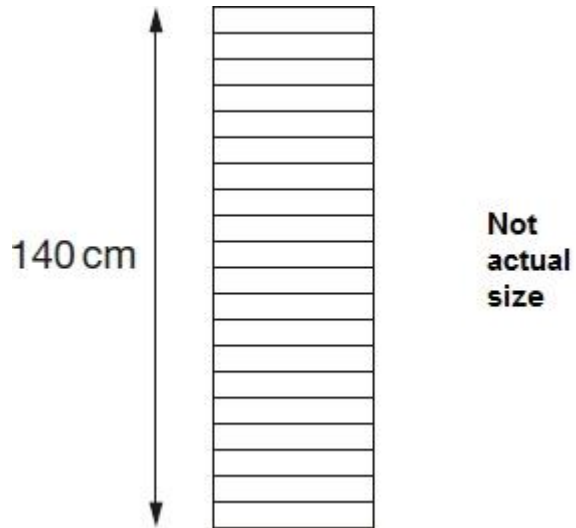
The area of the United Kingdom is larger than the area of Jamaica.

How many times larger is the United Kingdom?

1 mark

**Q3.**

A stack of 20 identical boxes is 140 cm tall.



Stefan takes **three** boxes off the top.

How tall is the stack now?

Show your method

cm

2 marks

**Q4.**

Here are the ingredients for chocolate ice cream.

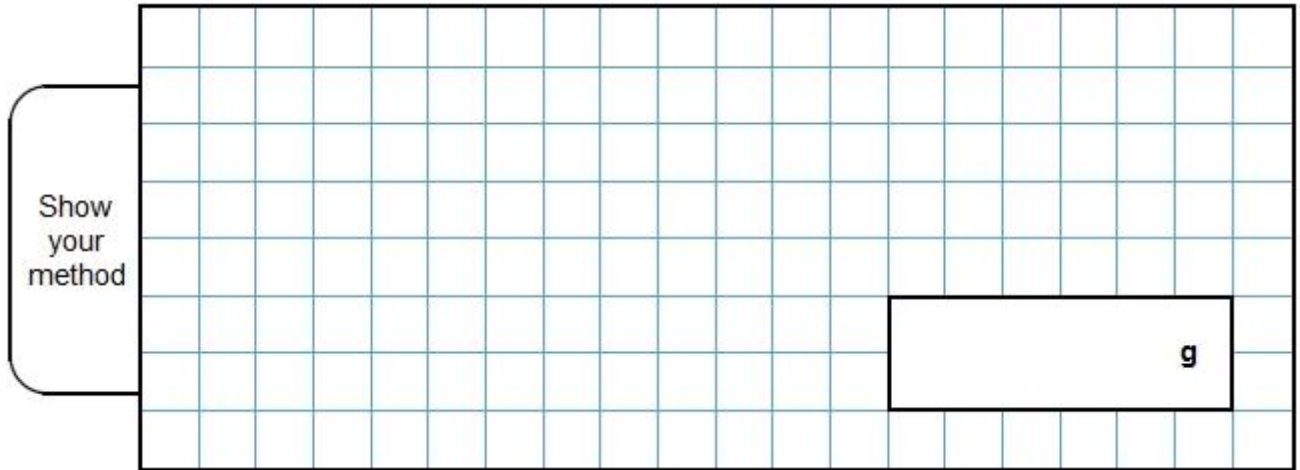
cream	400 ml
milk	500 ml
egg yolks	4
chocolate	120 g
sugar	100 g



Stefan has only 300 ml of cream to make chocolate ice cream.

How much **chocolate** should he use?

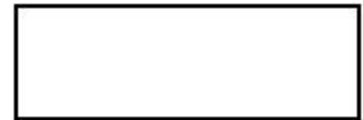
Show your method



2 marks

**Q5.**

Calculate **55%** of **640**



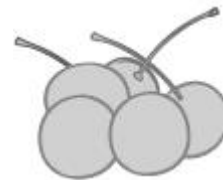
1 mark

**Q6.**

Seb had some cherries.

Every day he ate 10 cherries and gave 5 away.

After he gave the last 5 cherries away, he had eaten 40 cherries altogether.



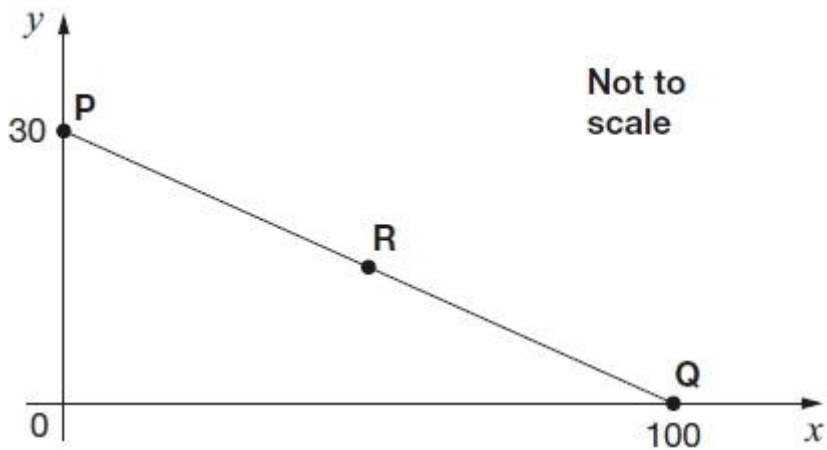
How many cherries did Seb have at the start?

Show your method

2 marks

**Q7.**

In this diagram **R** is an equal distance from **P** and **Q**.



What are the coordinates of **R**?

R = (      ,      )

1 mark

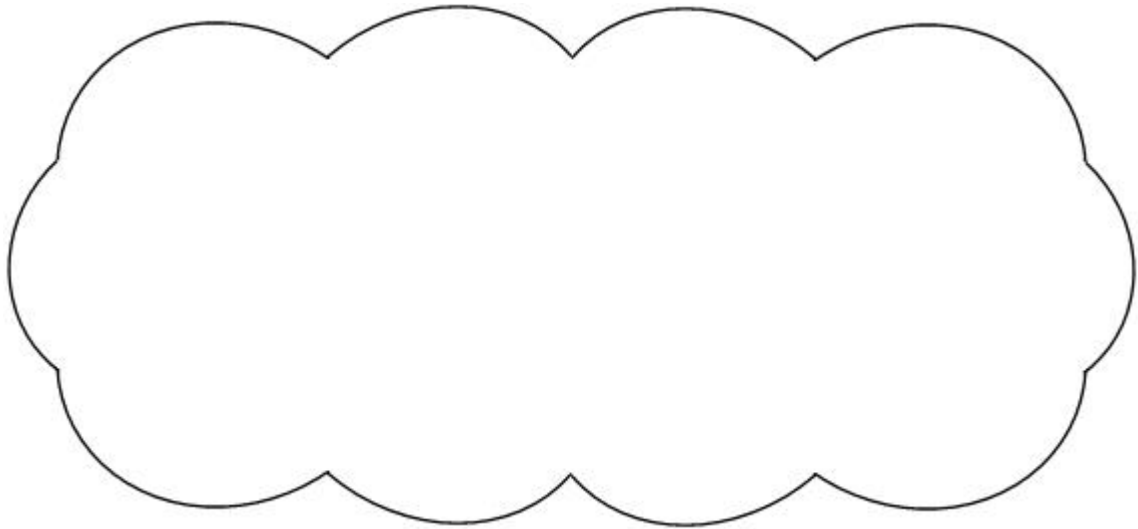
**Q8.**

Liam did a survey of 55 people to see how many were left-handed.

Liam says,

***'The results show that exactly 10% of the people in the survey are left-handed.'***

Explain why Liam cannot be correct.



1 mark

**Q9.**

These are the prices of cheese in a shop.



Cheddar cheese  
82p for 100 grams

Edam cheese  
66p for 100 grams

Cottage cheese  
45p for 100 grams

Mina buys **200 g** of Cheddar cheese and **150 g** of Edam cheese.

How much does she pay altogether?

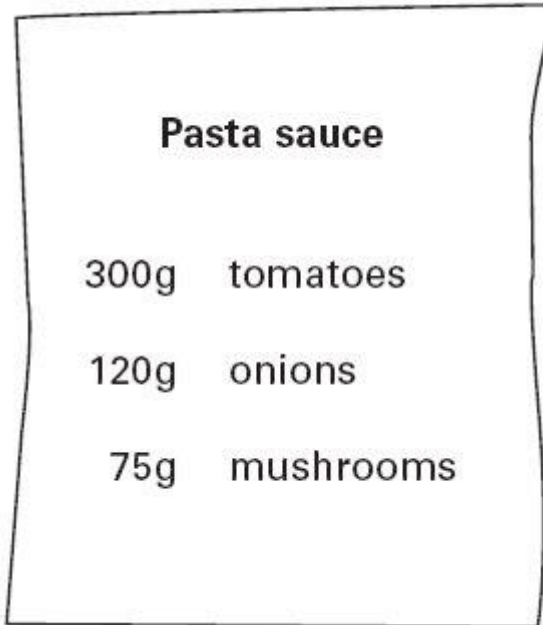


C is

2 marks

**Q11.**

Here is a recipe for pasta sauce.



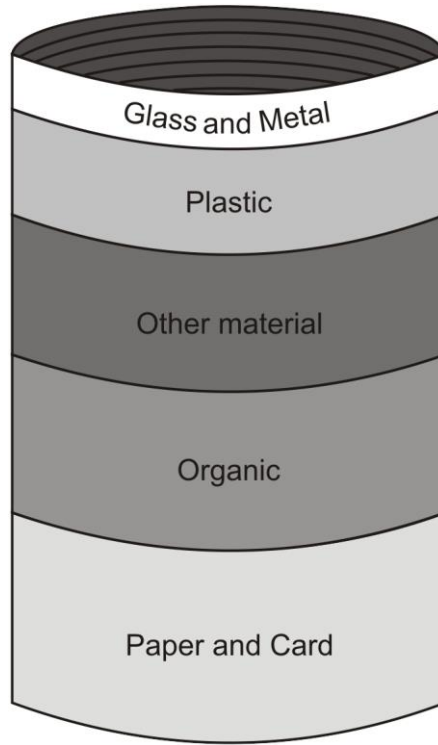
Josh makes the pasta sauce using **900 g** of **tomatoes**.

What weight of **onions** should he use?

1 mark

**Q12.**

This diagram shows the proportions of waste by weight a family throws away in one year,



Estimate what **fraction** of the waste is **organic**.

1 mark

The family throws away about **35 kilograms of plastic** in a year.

Use the diagram to estimate the weight of **glass and metal** they throw away.

1 mark

The family throws away **130 kg** of paper and card.

**70%** of this is **newspapers**.

What is the weight of **newspapers**?





Each ticket costs £24

There is a £3 charge for buying tickets.

Which of these shows how to calculate the total cost, in pounds?

Tick **one**.

number of tickets  $\times$  3 + 24

number of tickets  $\times$  24 + 3

number of tickets + 3  $\times$  24

number of tickets + 24  $\times$  3

1 mark

### Q15.

Here is a rule for the time it takes to cook a chicken.

**Cooking time = 20 minutes plus an extra  
40 minutes for each kilogram**

How many minutes will it take to cook a 3 kg chicken?

**minutes**

1 mark

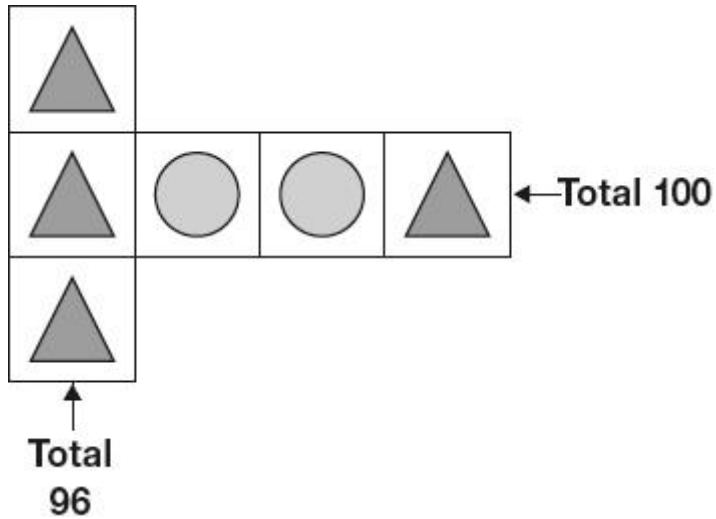
What is the mass of a chicken that takes 100 minutes to cook?

**kg**

1 mark

### Q16.

Each shape stands for a number.



Work out the **value** of each shape.

▲ = \_\_\_\_\_

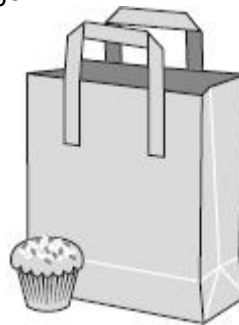
1 mark

● = \_\_\_\_\_

1 mark

**Q17.**

Maria bakes cakes and sells them in bags.



She uses this formula to work out how much to charge for one bag of cakes.

**Cost = number of cakes × 20p + 15p for the bag**

How much will a bag of 12 cakes cost?

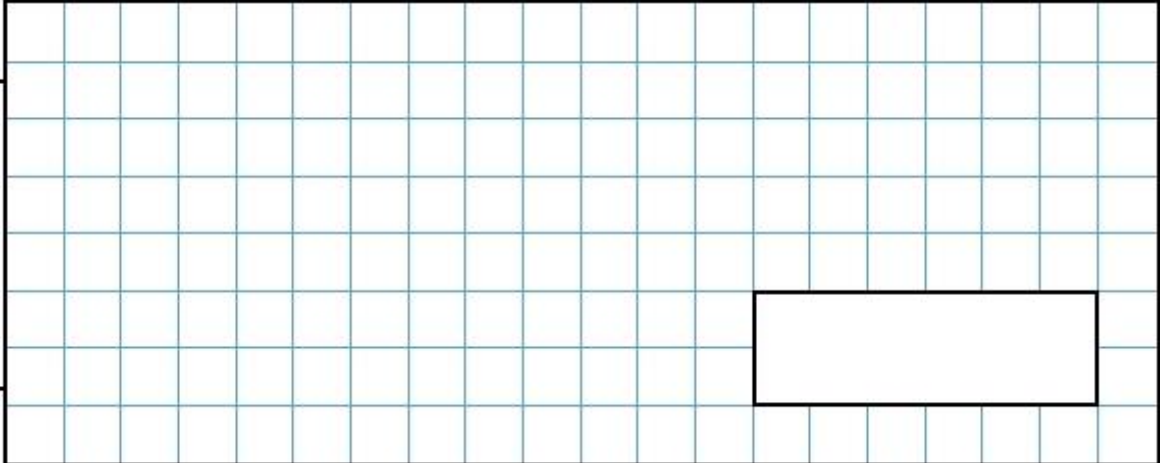
£

1 mark

Olivia buys a bag of cakes for £5.15

Use the formula to calculate how many cakes are in the bag.

Show your method



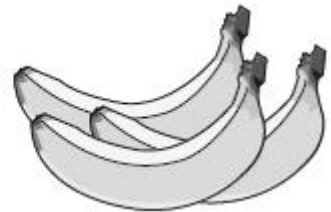
2 marks

**Q18.**

A shop sells fruit.

Chen buys 2 apples and 3 bananas.

He pays £2.35



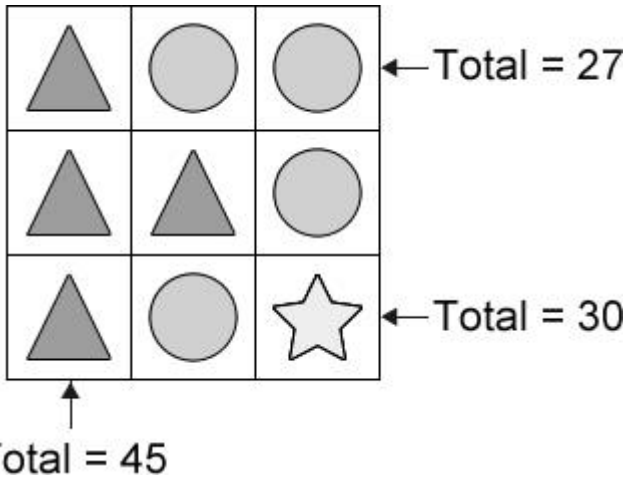
Megan buys 2 apples and 1 banana.

She pays £1.25





How much does **one** banana cost?






Work out the **value** of each shape.

 =

 =

 =

1 mark

**Q22.**

***a*** and ***b*** each represent a whole number between 1 and 10

$$2a + b = 8$$

Write the three possible combinations of ***a*** and ***b***  
One is done for you.

when  $a =$    $b =$

when  $a =$    $b =$

when  $a =$    $b =$

2 marks

## Mark schemes

**Q1.**

108

[1]

**Q2.**

24

[1]

**Q3.**

Award **TWO** marks for the correct answer of 119.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g.

- $140 \div 20 = 7$   
 $3 \times 7 = 21$   
 $140 - 21$

**OR**

- $140 \div 20 = 7$   
 $20 - 3 = 17$   
 $17 \times 7$

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2m

[2]

**Q4.**

Award **TWO** marks for the correct answer of 90g.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $300 \div 400 = \frac{3}{4}$   
 $\frac{3}{4} \times 120$

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

**Q5.**

352

***Do not accept 352%***

[1]



**Q6.**

Award **TWO** marks for the correct answer of 60

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- Ate 10, gave away 5

Ate 40, gave away 20

Ate 40 + 20 = wrong answer

- $40 \div 10 = 4$

$4 \times 5 = 20$

$20 + 40 =$  wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2  
U1

[2]

**Q7.**

(50, 15)

[1]

**Q8.**

An explanation which recognises that 10% of 55 is not a whole number, eg:

- '10% of 55 is  $5\frac{1}{2}$ , and you can't have  $5\frac{1}{2}$  people'

- 'It wouldn't be a whole number of people'

- 'No whole number out of 55 will give you 10%'

- 'If it was 5 people, 5 out of 55 isn't 10%.  
6 out of 55 isn't 10% either'

- 'Because you can't have half a person.'

- $5\frac{1}{2}$ ,

**Do not** accept vague or incomplete explanations, eg:

- 'You can't get 10% of 55'

- 'Some children write with both hands'.

U1

[1]

**Q9.**

- (a) Award **TWO** marks for the correct answer of £2.63

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

$$82p \times 2 = 164p$$

$$66p + 33p = 99p$$

$$164p + 99p = \text{wrong answer}$$

*Accept for **ONE** mark £263 OR £263p as evidence of appropriate working.*

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2

- (b) 300

1

[3]

**Q10.**

- (a) 13 for the  $x$  coordinate

*Accept unambiguous answers written on the diagram.*

U1

- (b) 15 for the  $y$  coordinate

*Accept unambiguous answers written on the diagram.*

1

*If the answer to (a) is 15 **AND** the answer to (b) is 13, then award **ONE** mark for (b).*

[2]

**Q11.**

360

*Accept 0.36 kg OR .36 kg*

[1]

**Q12.**

- (a) An answer in the range  $1/5$  to  $3/10$  OR 20% to 30%  
OR 0.2 to 0.3 INCLUSIVE.

*Numbers in range 20 to 30 must have % sign, eg:*

- Do not **accept** '25'

1

- (b) An answer in the range 15 to 25 kg INCLUSIVE.

1

- (c) Award **TWO** marks for correct answer of 91 kg.

If answer is incorrect, award **ONE** mark for appropriate calculation, eg:

- $70/100 \times 130 = \text{wrong answer};$

- 10% is 13 so 70%  $7 \times 13 =$  wrong answer.
- $H + 2H + H + 2H = 126$
- $20 + 40 + 20 + 40 = 120$

A calculation **MUST** be performed for award of one mark.  
 '70/100  $\times$  130' alone is insufficient for award of one mark.

Up to 2

[4]

**Q13.**

Award **ONE** mark for the correct box ticked, as shown:

Tick **one**.

$10 + a$	
$10 \div a$	
$a - 10$	
$10 - a$	✓
$a \times 10$	

Accept alternative unambiguous positive indication of the correct answer, e.g. Y.

[1]

**Q14.**

Second box only ticked correctly, as shown:

number of tickets $\times$ 3 + 24	
number of tickets $\times$ 24 + 3	✓
number of tickets + 3 $\times$ 24	
number of tickets + 24 $\times$ 3	

Accept alternative unambiguous positive indication of the correct answer, e.g. Y.

[1]

**Q15.**

(a) 140

The answer is a time interval

1

(b) 2

1

[2]

**Q16.**

(a)  $\blacktriangle = 32$

1

(b)  $\bigcirc = 18$

If the answers to  $\bigcirc$  and  $\blacktriangle$  are incorrect, award **ONE** mark if

$\blacktriangle + \bigcirc = 50$  unless  $\bigcirc = 25$

1

[2]

**Q17.**

(a) £2.55

1

(b) Award **TWO** marks for the correct answer of 25

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $\text{£}5.15 - 15\text{p} = \text{£}5$   
 $\text{£}5 \div 20\text{p}$

**OR**

- $\text{£}5.15 - 15\text{p} = \text{£}5$   
 $5 \times 5$

*Answer need not be obtained for the award of **ONE** mark.*

**Commentary:** The 2014 national curriculum specifies that pupils should use simple formulae (6A2).

Up to 2

[3]

**Q18.**

Award **TWO** marks for the correct answer of 55p **OR** £0.55

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

- $\text{£}2.35 - \text{£}1.25 = \text{£}1.10$

$\text{£}1.10 \div 2 =$  wrong answer

*Accept for **ONE** mark  $\text{£}55$  **OR**  $\text{£}55\text{p}$  **OR**  $0.55\text{p}$  as evidence of appropriate working.*

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2

[2]

**Q19.**

27

[1]

**Q20.**

16

[1]

**Q21.**Award **ONE** mark for three correct numbers, as shown.

$$\triangle = \boxed{15}$$

$$\circ = \boxed{6}$$

$$\star = \boxed{9}$$

[1]

**Q22.**Award **TWO** marks for both correct combinations, as shown.

$$\text{when } a = \boxed{2} \quad b = \boxed{4}$$

$$\text{when } a = \boxed{3} \quad b = \boxed{2}$$

**OR**

$$\text{when } a = \boxed{3} \quad b = \boxed{2}$$

$$\text{when } a = \boxed{2} \quad b = \boxed{4}$$

Award **ONE** mark for either combination correct, i.e.

when  $a =$    $b =$

**OR**

when  $a =$    $b =$

[2]