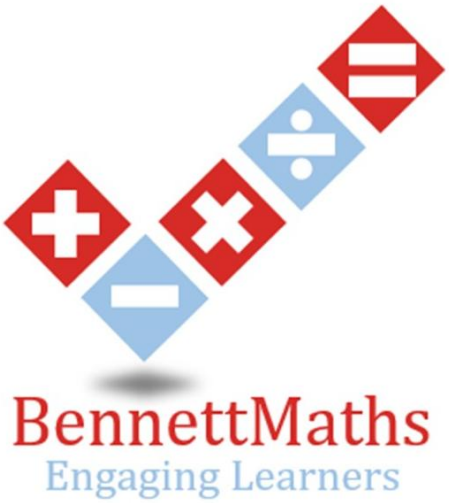
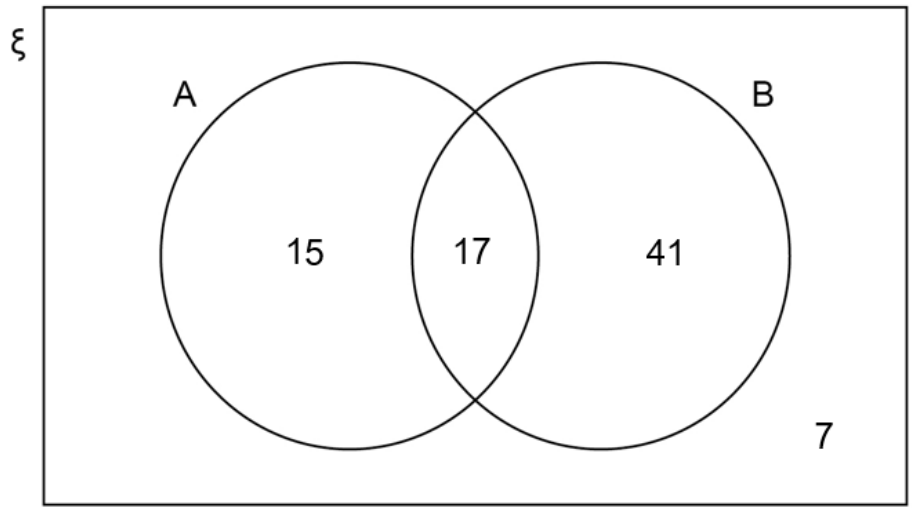


Name: _____

BennettMaths AQA 1H – Part 2

Do not write outside the box

11 The Venn diagram represents 80 items.



11 (a) Write down P(B)

[1 mark]

Answer _____

11 (b) Work out P(A U B)

[1 mark]

_____

_____

Answer _____

11 (c) Work out P(A' ∩ B)

[1 mark]

_____

_____

Answer _____

Do not write outside the box

12 (a) $a \times 10^n$ is a number in standard form.

Complete the inequality for the value of a.

[1 mark]

_____ $\leqslant a <$ _____

12 (b) $b \times 10^n$ is the number 45 000 written in standard form.

Work out $b \times 10^{-n}$

Write your answer as an ordinary number.

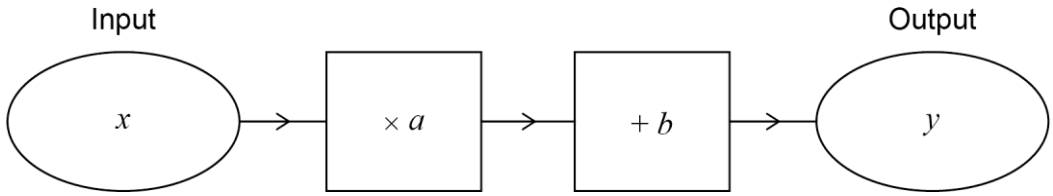
[2 marks]

Answer _____

Turn over for the next question

6

13 (a) Here is a number machine.



Show that when the input decreases by 3 the output decreases by $3a$.

[2 marks]

13 (b) $f(x) = kx^3$ where k is a constant.

Josh says that $f(2) \times f(1)$ is equal to $f(2)$ because $2 \times 1 = 2$

Is he correct?

Show working to support your answer.

[2 marks]

Do not write outside the box

14 Here is a list of 11 whole numbers in numerical order.

The lower quartile, median, upper quartile and highest value are missing.

1	3		9	13		23	32		44	

- median = 3.5 × lower quartile
- upper quartile = 6 × lower quartile
- range = 1.5 × interquartile range

Complete the list.

[2 marks]

Turn over for the next question

6

Do not write outside the box

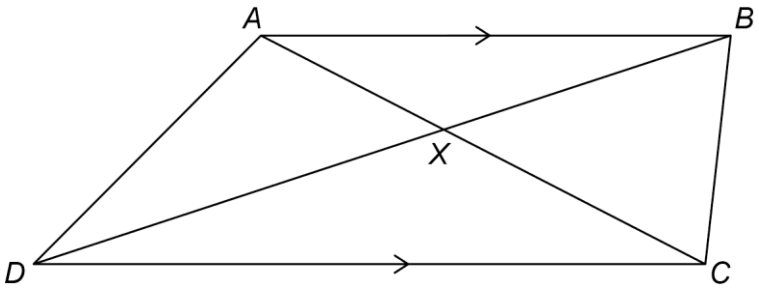
15 *ABCD* is a trapezium.

All four sides are different lengths.

AB is parallel to *CD*.

The diagonals intersect at *X*.

Not drawn accurately



For each statement, tick the correct box.

[4 marks]

	True	**May be true**	**Not true**
Triangles *AXD* and *BCX* are similar	☐	☐	☐
Triangles *ABX* and *CDX* are congruent	☐	☐	☐
Angle *BAC* = angle *ACD*	☐	☐	☐
Area of triangle *BCD* = area of triangle *ACD*	☐	☐	☐

Do not write outside the box

16 Solve the simultaneous equations

$5x + 3y = 9$

$2x - 4y = 14$

[4 marks]

$x =$ _____ $y =$ _____

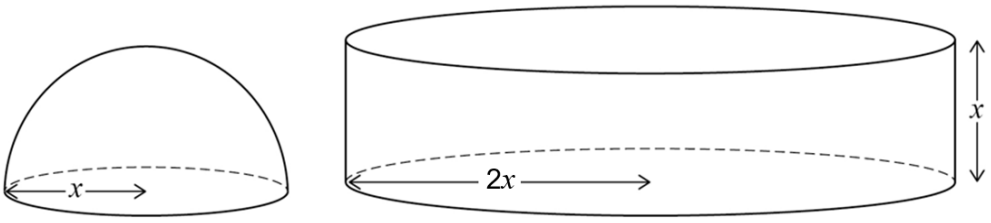
Turn over for the next question

8

Do not write outside the box

17 A solid hemisphere has radius x.

A solid cylinder has radius $2x$ and height x.



Volume of a sphere = $\frac{4}{3}\pi r^3$

where r is the radius

Work out the ratio

volume of the hemisphere : volume of the cylinder

Give your answer in its simplest form.

You **must** show your working.

[3 marks]

Answer _____ : _____

Do not write outside the box

18 $4 < \sqrt[3]{x} < 5$

Circle the possible value of x.

[1 mark]

1.4 64 102 500

19 Work out how many 5-digit **even** numbers can be made using these digits **once** each.

2 4 6 7 9

Do **not** list them.

[2 marks]

Answer _____

Turn over for the next question

6