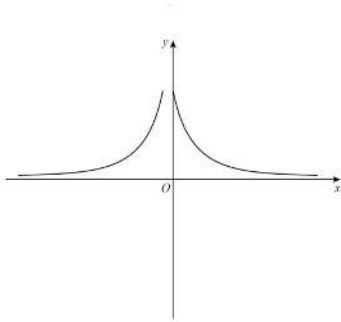


AQA GCSE Mathematics Non-Calculator 2023 Higher Paper 1 Revision Worksheet

Questions 9–17

(9) Erika tries to sketch the graph $y = \frac{1}{x}$ with $x \neq 0$.



Make two different criticisms of her sketch.

Criticism 1

Criticism 2

10 Sunita is x years old.

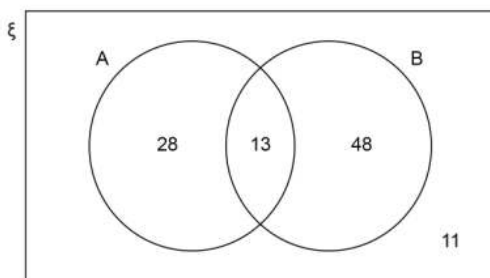
Beth is one year younger than Sunita.

Joel is double Sunita's age.

The mean of their ages is 5.

How old is **Joel**?

11 The Venn diagram represents 100 items.



(a) Write down $P(A \cap B)$

(b) Work out $P(A')$

(c) Work out $P(A \cup B)$

12

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

Complete the inequality for the value of a .

$$\leq a <$$

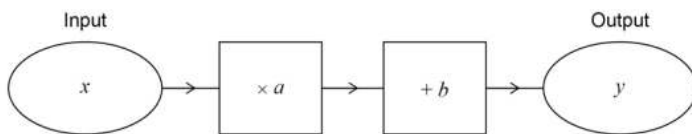
(b) $b \times 10^n$ is the number 7200 written in standard form.

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

Write your answer as an **ordinary number**.

13

(a) Here is a number machine:



Show that when the input increases by 2 the output increases by $2a$.

(b) $f(x) = kx^2$ where k is a constant.

Kai says that $\frac{f(6)}{f(2)}$ is equal to $f(3)$ because $\frac{6}{2} = 3$.

Is he correct? **Show working to support your answer.**

14

Here is a list of 11 whole numbers in numerical order. The lower quartile, median, upper quartile and highest value are missing.

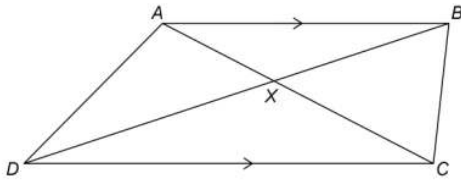
5	8		13	19		25	28		34	
---	---	--	----	----	--	----	----	--	----	--

- median = $2 \times$ lower quartile
- upper quartile = $2.5 \times$ lower quartile
- range = $2 \times$ interquartile range

Complete the list.

15

ABCD is a trapezium. All four sides are different lengths. AB is parallel to CD. The diagonals intersect at X.



For each statement, tick the correct box.

Statement	True	May be true	Not true
Triangles AXB and CXD are similar			
Triangles AXD and BXC are congruent			
Angle ADB = angle BDC			
Area of triangle ABC = area of triangle ABD			

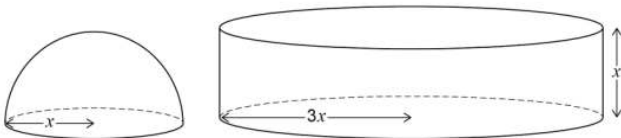
16 Solve the simultaneous equations: $2x - 5y = 13$

$$3x + 4y = 8$$

17

A solid hemisphere has radius x .

A solid cylinder has radius $3x$ and height x .



Work out the ratio:

total surface area of the hemisphere : total surface area of the cylinder

Give your answer in its simplest form.

You must show your working.

Surface area of a sphere = $4\pi r^2$ where r is the radius.