

IGCSE CORE MATH EXAM

Materials: calculator, blank paper

NAME: _____ **CLASS:** _____

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen. You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

Answer **all** questions.

If working is needed for any question it must be shown below that question.

Electronic calculators **should be used**.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to **three significant figures**.

Give answers in degrees to one decimal place.

Work out the lowest common multiple (LCM) of 18 and 21.

..... [2]

(a) Calculate $\sqrt{2.38 + 6.4^2}$, writing down your full calculator display.

..... [1]

(b) Write your answer to **part (a)** correct to 4 decimal places.

..... [1]

(a) Write twenty five million in figures.

Answer [1]

(b) Write the following in order of size, starting with the smallest.

$\frac{2}{3}$ 65% 0.6

Answer < < [1]

(c) In a sale a coat costing \$250 is reduced to \$200. Find the percentage of discount in the cost.

Answer [2]

The mass of a carbon atom is 2×10^{-23} g.

How many carbon atoms are there in 10 g of carbon?

Answer[2]

Express 0.123 as a fraction in its simplest form.

Answer[3]

- (a) A box contains 3 blue pens, 4 red pens and 8 green pens only.
A pen is chosen at random from the box.

Find the probability that this pen is green.

..... [1]

- (b) A cube has only one of its six faces painted yellow.
This cube is rolled 240 times.

Work out the expected number of times that it lands on the yellow face.

..... [1]

40 people were asked how many times they visited the cinema in one month.
The table shows the results.

Number of cinema visits	0	1	2	3	4	5	6	7
Frequency	5	5	6	6	7	3	6	2

- (a) (i) Find the mode.

..... [1]

- (ii) Calculate the mean.

..... [3]

Factorise completely.

(a) $10 + 16w$

..... [1]

(b) $12tx - 8t^2$

..... [2]

Simplify.

$(x^3)^4$

..... [1]

$$4^w = \frac{1}{16}$$

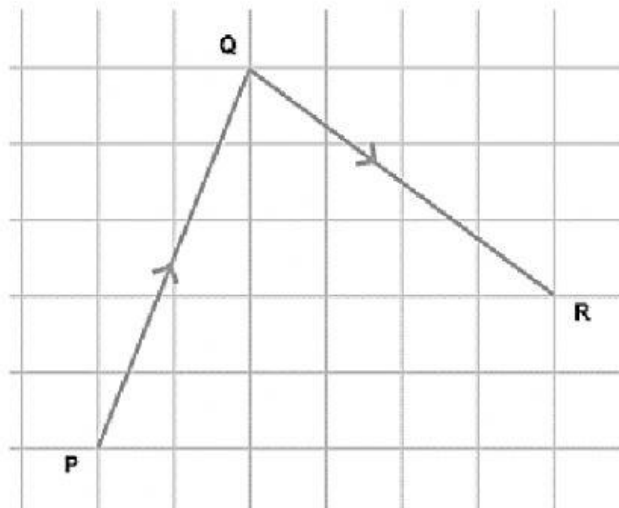
Find the value of w .

$w =$ [1]

Expand and simplify.

$$6(2y - 3) - 5(y + 1)$$

..... [2]



(a) The diagram shows the map of part of an orienteering course.

Write $\vec{PQ}$ and $\vec{QR}$ as column vectors

Answer $\vec{PQ} = \begin{pmatrix} \text{---} \\ \text{---} \end{pmatrix}$, $\vec{QR} = \begin{pmatrix} \text{---} \\ \text{---} \end{pmatrix}$ [2]

(b) Calculate

$$\vec{PQ} + \vec{QR}$$

Answer $\begin{pmatrix} \text{---} \\ \text{---} \end{pmatrix}$ [1]

$$2\vec{PQ}$$

Answer $\begin{pmatrix} \text{---} \\ \text{---} \end{pmatrix}$ [1]