

You must write down all the stages in your working.

Q1

$$P = \frac{2a - c}{d}$$

$a = 58.4$ correct to 3 significant figures.

$c = 20$ correct to 2 significant figures.

$d = 3.6$ correct to 2 significant figures.

Work out the upper bound for the value of P .

Show your working clearly.

Give your answer correct to 2 decimal places.

Q2

$$a = \frac{v - u}{t}$$

$v = 9.6$ correct to 1 decimal place

$u = 3.8$ correct to 1 decimal place

$t = 1.84$ correct to 2 decimal places

Calculate the upper bound for the value of a .

Give your answer as a decimal correct to 2 decimal places.

Show your working clearly.

Q3

$$A = w - \frac{x^2}{y}$$

$w = 3.45$ correct to 2 decimal places.

$x = 1.9$ correct to 1 decimal place.

$y = 5$ correct to the nearest whole number.

Work out the lower bound of the value of A

Show your working clearly.

(3)

Q4

The acceleration, a , of an object is given by

$$a = \frac{v - u}{t}$$

where

$v = 45.23$ correct to 2 decimal places

$u = 5.12$ correct to 2 decimal places

$t = 8.5$ correct to 2 significant figures

By considering bounds, work out the value of a to a suitable degree of accuracy.
Show your working clearly and give a reason for your answer.

(5)

Q5

The weight of a bag of apples is 475 g correct to the nearest g

(a) Write down the lower bound of the weight.

..... g
(1)

The height of a box is 120 cm correct to the nearest 10 cm

(b) Write down the upper bound for the height.

..... cm
(1)

Q6

$$T = \frac{x^2 + y^2}{w}$$

$x = 28.4$ correct to 1 decimal place.

$y = 17$ correct to 2 significant figures.

$w = 90$ correct to the nearest 5

Calculate the upper bound for the value of T

Give your answer correct to 3 significant figures.

Show your working clearly.

(3)

Q7

$$P = \frac{a}{m - x}$$

$x = 8$ correct to 1 significant figure

$a = 4.6$ correct to 2 significant figures

$m = 20$ correct to the nearest 10

Calculate the lower bound of P .

Show your working clearly.

..... (3)

Q8

$e = 8.31$ correct to 2 decimal places

$f = 0.65$ correct to 2 decimal places

Work out the lower bound for the value of $e - f$

Show your working clearly.

(2)

Q9

! The diagram shows a square inside rectangle $ABCD$

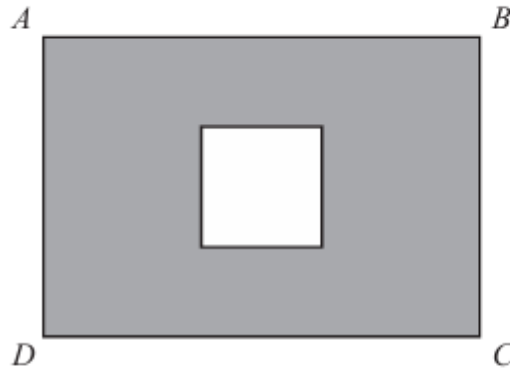


Diagram **NOT**
accurately drawn

The total area of the region shown shaded in the diagram is $X\text{cm}^2$

$AB = 11.5\text{ cm}$ correct to the nearest 0.5 cm

$BC = 9.2\text{ cm}$ correct to 2 significant figures

side of square = 4.1 cm correct to 2 significant figures

By considering bounds, work out the value of X to a suitable degree of accuracy.
Show your working clearly.

Q10

$$P = a(c + y)$$

$a = 8.3$ correct to 2 significant figures

$c = 2$ correct to 1 significant figure

$y = 15$ correct to the nearest 5

Work out the upper bound for the value of P
Show your working clearly.

(3)

Q11

$$G = \frac{c}{2f - 3h}$$

$c = 8$ correct to the nearest whole number

$f = 6.62$ correct to 2 decimal places

$h = 1.2$ correct to 1 decimal place

Work out the lower bound for the value of G
Give your answer correct to 3 decimal places.
Show your working clearly.

.....**(3)**

Q12

$$D = \frac{n}{p - q}$$

$n = 10.3$ correct to 1 decimal place

$p = 7.24$ correct to 2 decimal places

$q = 4.39$ correct to 2 decimal places

By considering bounds, work out the value of D to a suitable degree of accuracy.
Show your working clearly.

.....(5)