

Upper & Lower Bounds – Past Paper Questions

Q1.

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

$x = 8$ 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.

(Total for question = 4 marks)

Q2.

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

$a = 58.4$ 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.

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(Total for question = 3 marks)

Q3.

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

$v = 9.6$ 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.

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(Total for question = 3 marks)

Q4.

$$T = \frac{P}{r}$$

$p = 0.51$ correct to 2 significant figures.
 $r = 6.3$ correct to 2 significant figures.

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

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(Total for question = 2 marks)

Q5.

$$X = \frac{2a - b}{f}$$

$a = 7.5$ correct to 1 decimal place.
 $b = 3.42$ correct to 2 decimal places.
 $f = 2$ correct to the nearest whole number.

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

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(Total for question = 3 marks)

Q6.

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

$a = 8.3$ 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.

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(Total for question = 3 marks)