GCSE QUESTIONS

Q1. CALCULATOR ALLOWED

$w = 4u + 3$

Find the value of w when $u = 8$

.....

(Total for question = 2 marks)

Q2. CALCULATOR ALLOWED

$v = u + 5t$
$u = 4$
$t = 3$

Work out the value of v.

v = ...

(Total for question = 2 marks)

Q3. CALCULATOR ALLOWED

$P = 2x + 3y$
$x = 5$
$y = 4$

Work out the value of P.

p = ...

(Total for Question is 2 marks)

Q4. CALCULATOR ALLOWED

$R = 7x + 4y$
$x = -1$
$y = 3$

Work out the value of R.

R = ...

(Total for question = 2 marks)

Q5. CALCULATOR ALLOWED

$P = 7r + 3q$

Work out the value of P when $r = 5$ and $q = -4$

.....

(Total for question = 2 marks)

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Q6. CALCULATOR ALLOWED

Complete this table of values.

n	$3n + 2$
12	.....
.....	47

(Total for question is 3 marks)

Q7. CALCULATOR ALLOWED

Angela and Michelle both work as waitresses at the same restaurant.

This formula is used to work out the total amount of money each waitress gets.

Total amount = £6.50 × number of hours worked + tips

The table shows the number of hours Angela and Michelle each worked last Saturday.
It also shows the tips they got.

	Number of hours worked	Tips
Angela	8	£12
Michelle	7	£15

Who got the higher total amount of money last Saturday? You must show clearly how you got your answer.

(Total for Question is 4 marks)

Q8. CALCULATOR ALLOWED

A teacher asked Tyrese to find the value of $2n^2 - 3n$ when $n = 3$

Here is his working.

$2 \times 3^2 - 3 \times 3$
$= 6^2 - 9$
$= 36 - 9$
$= 27$

(i) What mistake has Tyrese made?

.....

.....

(1)

The teacher then asked Megan to find the value of $2n^2 - 3n$ when $n = -4$

Here is her working.

$2 \times -4^2 - 3 \times -4$
$= 2 \times -16 + 12$
$= -32 + 12$
$= -20$

(ii) What mistake has Megan made?

.....

.....

(1)

(Total for question = 2 marks)

Q9. CALCULATOR ALLOWED

$x = 0.7$

Work out the value of $\dfrac{(x+1)^2}{2x}$

Write down all the figures on your calculator display.

.....

(Total for Question is 2 marks)

Q10. CALCULATOR ALLOWED

You can use this rule to work out the total hire charge, in pounds (£), for hiring a 3D printer for a number of weeks.

Total hire charge (£) = number of weeks × 70 + 50

Mia wants to hire a 3D printer for 4 weeks.

(a) Work out the total hire charge.

£ .....

(2)

Zahir hires a 3D printer. The total hire charge is £680

(b) For how many weeks does Zahir hire the 3D printer?

..... weeks

(2)

(Total for question = 4 marks)

Q11. CALCULATOR ALLOWED

A rule to change a UK shoe size to a European shoe size is

multiply the UK shoe size by 1.25 and then add 32

European shoe sizes are given as whole numbers.

Katie's UK shoe size is 5

(a) Work out Katie's European shoe size.

.....

(2)

Gustav's European shoe size is 42

(b) Work out Gustav's UK shoe size.

.....

(2)

(Total for question = 4 marks)

Q12. CALCULATOR ALLOWED

$S = \pi^2(b^2 - a^2)$

$a = 8$, $b = 10$

Calculate the value of S.
Give your answer correct to 3 significant figures.

.....

(Total for question = 2 marks)

Q13. CALCULATOR ALLOWED

$$D = \frac{u^2}{2a}$$

$u = 26.2$ correct to 3 significant figures

$a = 4.3$ correct to 2 significant figures

(a) Calculate the upper bound for the value of D.
Give your answer correct to 6 significant figures. You must show all your working.

.....

(3)

The lower bound for the value of D is 78.6003 correct to 6 significant figures.

(b) By considering bounds, write down the value of D to a suitable degree of accuracy.
You must give a reason for your answer.

.....

.....

(2)

(Total for question = 5 marks)

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Q14. CALCULATOR ALLOWED

Jarek uses the formula

$$\text{Area} = \frac{1}{2}ab\sin C$$

to work out the area of a triangle.

For this triangle,

a = 7.8 cm correct to the nearest mm.
b = 5.2 cm correct to the nearest mm.
C = 63° correct to the nearest degree.

Calculate the lower bound for the area of the triangle.

..... cm^2

(Total for question = 3 marks)

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