

GCSE QUESTIONS

Q1. NON-CALCULATOR

$$a = 3$$

$$b = 5$$

Work out the value of $4a + 2b$

.....

(Total for Question is 2 marks)

Q2. NON-CALCULATOR

$$a = 2$$

$$b = 3$$

Work out the value of $6a + 5b$

.....

(Total for question = 2 marks)

Q3. NON-CALCULATOR

$$a = 5$$

$$b = 3$$

Work out the value of $4a + 2b$

.....
(Total for Question is 2 marks)

Q4. NON-CALCULATOR

$$g = 9$$

$$h = 4$$

Work out the value of $2g + 3h$

.....
(Total for question = 2 marks)

Q5. NON-CALCULATOR

$$k = 5$$

$$m = 3$$

Work out the value of $2k + 4m$

.....
(Total for question = 2 marks)

Q6. NON-CALCULATOR

(b) $f = 6$

$$g = 5$$

Work out the value of $3f - 2g$

.....
(Total for question = 2 marks)

Q7. NON-CALCULATOR

$$L = 3a + 2c$$

$$a = 5$$

$$c = 8$$

Work out the value of L .

$$L = \dots\dots\dots$$

(Total for Question is 2 marks)

Q8. NON-CALCULATOR

$$y = 4x - 3t$$

$$x = 2$$

$$t = 5$$

(a) Work out the value of y .

$$y = \dots\dots\dots$$

(2)

$$y = 4x - 3t$$

$$y = 30$$

$$t = 2$$

(b) Work out the value of x .

$$x = \dots\dots\dots$$

(2)

(Total for question = 4 marks)

Q9. NON-CALCULATOR

$$x = -5$$

$$y = 2$$

(a) Work out the value of $3x + 4y$

(Total for Question is 2 marks)

Q10. NON-CALCULATOR

$$v = u + at$$

$$u = 1 \quad a = -3 \quad t = \frac{1}{2}$$

Work out the value of v .

$$v = \dots\dots\dots$$

(Total for question = 2 marks)

Q11. NON-CALCULATOR

$$p = 5s - 2t$$

$$s = 4$$

$$t = 3$$

(a) Work out the value of p .

$$p = \dots\dots\dots (2)$$

$$y = x^2$$

$$x = -5$$

(b) Work out the value of y .

$$y = \dots\dots\dots (1)$$

(Total for Question is 3 marks)

Q12. NON-CALCULATOR

$$a = 4$$

$$b = -5$$

(a) Work out the value of $2a + 3b$

$$\dots\dots\dots (2)$$

$$x = 3$$

(b) Work out the value of $4x^2$

$$\dots\dots\dots (1)$$

(Total for question = 3 marks)

Q13. NON-CALCULATOR

$$P = 4x + 3y$$

$$x = 5$$

$$y = -2$$

Work out the value of P .

$$\dots\dots\dots (Total for question = 2 marks)$$

Q14. NON-CALCULATOR

Given $x = 4$

Work out the value of $2x^2 + 7$

.....
(Total for Question is 2 marks)

Q15. NON-CALCULATOR

$$p = n^3 - 5$$

$$n = 2$$

Work out the value of p .

.....
(Total for question = 2 marks)

Q16. NON-CALCULATOR

$$x = 3$$

Work out the value of $4x^2$

.....
(Total for question = 1 mark)

Q17. NON-CALCULATOR

$$v = 2t^2$$

$$t = 3$$

Work out the value of v .

.....
(1)
(Total for question = 1 marks)

Q18. NON-CALCULATOR

$$h = 3t^2$$

(a) Work out the value of h when $t = 5$

.....
(2)

$$h = 3t^2$$

(b) Work out the value of t when $h = 108$

.....
(2)
(Total for question = 4 marks)

Q19. NON-CALCULATOR

$$t = x^2 - 5y$$

$$x = 6$$

$$y = 4$$

Work out the value of t .

.....
(Total for Question is 2 marks)

Q20. NON-CALCULATOR

$$v^2 = u^2 + 2as$$

$$u = 12 \quad a = -3 \quad s = 18$$

Work out a value of v .

.....
(Total for question = 2 marks)

Q21. NON-CALCULATOR

Multiply the base by the height.
 Then divide by 2

Here is a rule for working out the area of a triangle.

A triangle has a base of 12 cm and a height of 6 cm.
 (a) Use the rule to work out the area of the triangle.

..... cm²
(2)

A different triangle has an area of 55 cm².

It has a height of 11 cm.

(b) Work out the base of this triangle.

..... cm
(2)

(Total for Question is 4 marks)

Q22. NON-CALCULATOR

You can use this rule to work out the total cost of hiring a car.

Total cost = £4 per hour plus £12

Arun hires a car for 5 hours.

(a) Work out the total cost.

.....

(2)

Raj hires a car.

The total cost is £40

(b) Work out how many hours Raj hires the car for.

.....

(3)

(Total for Question is 5 marks)

Q23. NON-CALCULATOR

You can use this rule to work out the cost, in pounds, of hiring a drill.

To find the cost in pounds

Multiply the number of days hired by 8 and then add 20

Janice hires a drill for 3 days.

(a) Work out the cost.

£

(2)

Karim hires the drill for 6 days.

Janice says "It will cost you twice as much as it cost me."

(b) Is Janice right? You must show how you got your answer.

.....
.....
.....
.....

(2)

(Total for Question is 4 marks)

Q24. NON-CALCULATOR

You can use this rule to work out the total hire charge, in pounds (£), for hiring a satellite phone.

$\text{Total hire charge} = \text{number of weeks} \times 90 + 50$
--

Ismail wants to hire a satellite phone for 4 weeks.

(a) Work out the total hire charge.

£.....

(2)

Dominik hires a satellite phone.
His total hire charge is £ 860

(b) For how many weeks did he hire the phone?

..... weeks

(3)

(Total for question = 5 marks)

Q25. NON-CALCULATOR



Take **two** 5 m/ spoons full
twice a day

There are 300 m/ of medicine in a bottle.
Mary has to take two 5 m/ spoons full of medicine twice a day.
Mary has to take the medicine until the bottle is empty.

(a) How many days does Mary have to take the medicine for?

..... days
(3)

You can work out the amount of medicine, c m/, to give to a child by using the formula

$$c = \frac{ma}{150}$$

m is the age of the child, in months.
 a is an adult dose, in m/.
A child is 30 months old.
An adult's dose is 40 m/.

(b) Work out the amount of medicine you can give to the child.

..... m/
(2)

(Total for Question is 5 marks)

Q26. NON-CALCULATOR

This formula is used to work out the body mass index, B , for a person of mass M kg and height H metres.

$$B = \frac{M}{H^2}$$

A person with a body mass index between 25 and 30 is overweight.

Arthur has a mass of 96 kg. He has a height of 2 metres.

Is Arthur overweight? You must show all your working.

(Total for Question is 3 marks)

Q27. NON-CALCULATOR

You can change temperatures from °F to °C by using the formula

$$C = \frac{5(F - 32)}{9}$$

F is the temperature in °F.

C is the temperature in °C.

The minimum temperature in an elderly person's home should be 20°C.

Mrs Smith is an elderly person.

The temperature in Mrs Smith's home is 77°F.

(a) Decide whether or not the temperature in Mrs Smith's home is lower than the minimum temperature should be.

(3)

(b) Make F the subject of the formula $C = \frac{5(F - 32)}{9}$

(3)

(Total for Question is 6 marks)

Q28. NON-CALCULATOR

The formulae below can be used to work out the cost, £C, of a taxi journey of x miles with three different taxi companies.

Reliable Taxis

$$C = 1.5x$$

Speedy Taxis

$$C = 1.1x + 11.5$$

City Taxis

$$C = 1.25x + 8$$

Which is the cheapest company to use for a taxi journey of 30 miles?
You must show how you get your answer.

(Total for question = 3 marks)