Non-Calculator

Q1.

(a) Solve $\frac{x}{5} = -6$

Answer x = _____

(1)

(b) Factorise fully $4t - 20$

Answer _____

(1)

(c) Expand and simplify $3(2m - 4) + 5(m + 2)$

Answer _____

(2)

(d) Simplify fully $4gk^2 \times 2g^3k^3$

Answer _____

(2)

(e) Factorise fully $10q^2 - 15qr$

Answer _____

(2)

(Total 8 marks)

Q2.

(a) Simplify $2f + 3e + 4f$

_____

Answer _____

(1)

(b) Solve $x - 7 = 29$

_____

$x =$ _____

(1)

(Total 2 marks)

Q3.

(a) Solve $3a = 12$

_____

Answer $a =$ _____

(1)

(b) Solve $\frac{x}{5} = -6$

_____

Answer $x =$ _____

(1)

(c) Solve $5c + 4 = 19$

_____

_____

Answer $c =$ _____

(2)

(d) Factorise fully $4t - 20$

_____

Answer _____

(1)

(Total 5 marks)

Q4.

Solve the equation $\frac{2x-3}{4}+\frac{x-1}{3}=2$

Answer x = _____

(Total 5 marks)

Q5.

(a) Solve $6x = 54$

x = _____

(1)

(b) Solve $3y + 15 = 9$

y = _____

(2)

(c) Solve $4w + 2 = 2w + 7$

w = _____

(3)

(Total 6 marks)

Q6.

(a) Find the value of $3x + 2y$ when $x = 4$ and $y = -5$

Answer _____

(2)

(b) Solve $\frac{c}{4} = 3$

Answer c = _____

(1)

(c) Solve $2(3w - 4) = 7$

Answer w = _____

(3)

(d) Expand $a(a^2 + 4)$

Answer _____

(2)

(Total 8 marks)

Q7.

(a) Solve $x - 7 = 18$

_____

$x =$ _____

(1)

(b) Write an equation which has 8 as its solution.

_____

Answer _____

(1)

(c) The solution to $2x + a = b$ is $x = 5$

Work out **one** possible pair of values for a and b.

_____

_____

_____

$a =$ _____ $b =$ _____

(2)

(Total 4 marks)

Q8.

In an office there are twice as many females as males.

$\frac{1}{4}$ of the females wear glasses.

$\frac{3}{8}$ of the males wear glasses.

84 people in the office wear glasses.

Work out the number of people in the office.

_____

_____

_____

_____

_____

_____

Answer _____

(Total 4 marks)

Q9.

Solve $8x - 10 = 30$

$x =$ _____

(Total 2 marks)

Q10.

(a) Solve $5x + 3 = 3(x + 2)$

Answer $x =$ _____

(3)

(b) $2(x + 16) + 4(x - 5)$ simplifies to $a(x + b)$

Work out the values of a and b.

Answer $a =$ _____ , $b =$ _____

(3)

(Total 6 marks)

Q11.

Solve $5x - 2 = x + 16$

$x =$ _____

(Total 3 marks)

Q12.

(a) Factorise $3x - 15$

Answer _____

(1)

(b) Multiply out $5(y + 4t - 2)$

_____

Answer _____

(2)

(c) Solve $3(w + 2) = 2w - 1$

_____

_____

_____

w = _____

(3)

(Total 6 marks)

Q13.

Solve $6x - 5 = 2x + 13$

_____

_____

_____

_____

x = _____

(Total 3 marks)

Q14.

Solve $5x - 9 = 3x + 11$

_____

_____

_____

_____

x = _____

(Total 3 marks)

Calculator

Q15.

(a) Solve $6x - 5 = 28$

$x =$ _____

(2)

(b) Simplify fully $3a + 5b - a + 2b$

Answer _____

(2)

(Total 4 marks)

Q16.

(a) Solve $5(x - 2) = 35$

$x =$ _____

(3)

(b) Solve $9y + 1 = 6y + 13$

$y =$ _____

(3)

(Total 6 marks)

Q17.

The table shows information about some CDs.

Type	Rock	Pop	Jazz
Number of CDs	2	x	$2x + 5$

A CD is chosen at random.

The probability it is **rock** is $\frac{1}{20}$

Work out the probability it is jazz.

Answer _____

(Total 4 marks)

Q18.

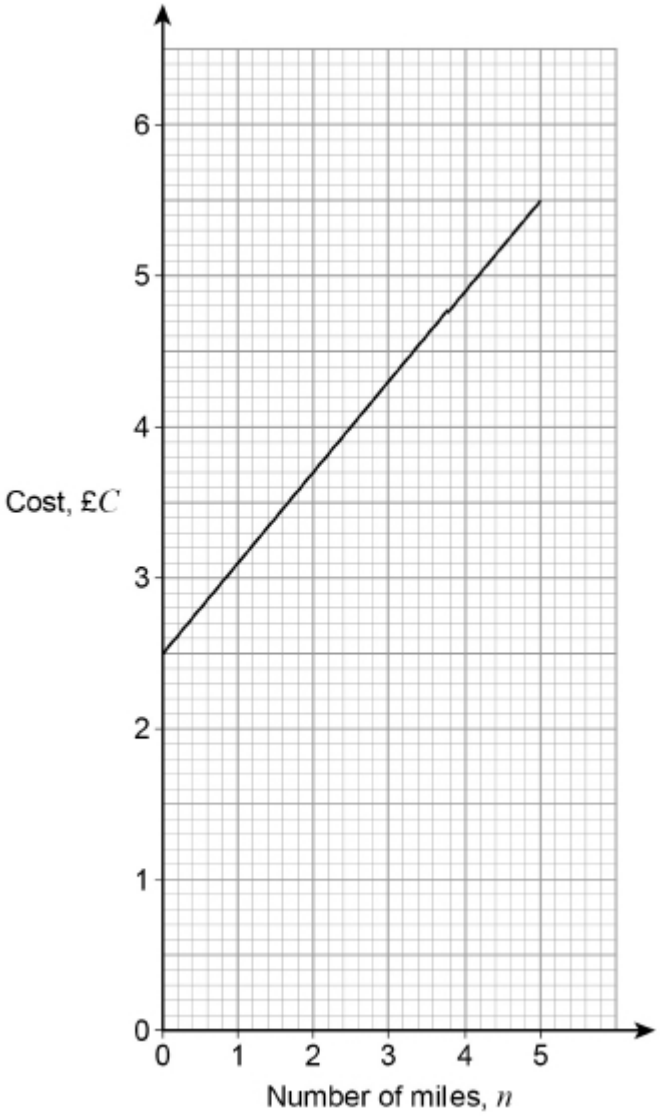
Solve $\frac{4c+3}{2} + \frac{c-8}{5} = 1$

c = _____

(Total 4 marks)

Q19.

The graph shows the cost of some taxi journeys.



Work out a formula for C in terms of n.

_____

_____

_____

Answer _____

(Total 3 marks)

Q20.

Solve $\frac{18 + 5x}{3} = 10 - x$

$x =$ _____

(Total 4 marks)

Q21.

(a) Solve $x + 3 = 7$

Answer x = _____

(1)

(b) Solve $2x + 5 = 1$

Answer x = _____

(2)

(Total 3 marks)

Q22.

Solve $4(3x - 7) = 20$

$x =$ _____

(Total 3 marks)

Q23.

(a) Solve $6x + 4 = 2(2x - 5)$

$x =$ _____

(3)

(b) Multiply out $y(2 - y^3)$

Answer _____

(2)

(Total 5 marks)

Q24.

A bag contains counters that are red, blue, green or yellow.

	red	**blue**	**green**	**yellow**
Number of counters	9	$3x$	$x - 5$	$2x$

A counter is chosen at random.

The probability it is **red** is $\frac{9}{100}$

Work out the probability it is green.

Answer _____

(Total 4 marks)

Q25.

(a) Rearrange the formula to make w the subject of $y = 3w + 8$

Answer _____

(2)

(b) Solve $5(x + 4) = 3x + 23$

$x =$ _____

(3)

(Total 5 marks)