

NAME

Non-calculator

1 Solve $\frac{5x}{4} = -10$

.....
(1 mark)

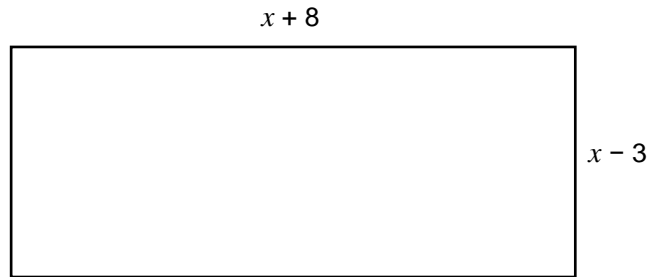
2 Solve $3p + 1 = 2p - 7$

.....
(2 marks)

3 Work out the value of $2t^3 - t$ when $t = 2$

.....
(2 marks)

4 Write and simplify an expression for the area of the rectangle.



.....
(2 marks)

5 Simplify $\frac{6p^2 \times 4p^5}{8p^4}$

.....
(2 marks)

6 Solve $5(x + 7) = 3(x + 15)$

$x =$
(2 marks)

7 Work out the value of $\frac{(x-a)^2}{2a}$ when $x = -4$ and $a = 8$

.....
(2 marks)

8 Write $3z^2 \div 6z^3$ as a unit fraction

.....
(1 mark)

9 a Explain why it is not possible to work out the value of $\sqrt{x^2 - y}$ when $x = -3$ and $y = 17$

.....
.....
(1 mark)

b Explain why it is possible to work out the value of $\sqrt[3]{x^2 - y}$ when $x = -3$ and $y = 17$

.....
.....
(1 mark)

10 Simplify $x(x + 7) - (x + 3)(x - 1)$

.....
(2 marks)



Calculator

11 Cupcakes cost 60p each.

Boxes cost 40p each.

The cost of n cupcakes and two boxes is £7.40

Find the value of n .

.....
(2 marks)

12 To repair a computer, an IT expert charges £35 basic fee and then £1.40 per minute.

The total charge is £ R for a repair taking x minutes.

a Write a formula for R in terms of x .

.....
(1 mark)

b Work out the cost of a repair that takes 45 minutes.

£.....
(2 marks)

13 Use the formula $F = ma$ to calculate F when $m = 24$ and $a = 9.8$

£.....
(1 mark)

14 Use the formula $v^2 - u^2 = 2as$ to work out the value of a when

$$v = 13, u = 2, s = 100$$

.....
(2 marks)

15 Work out the value of $\sqrt{a^3 + 4b^2}$ when $a = 4$ and $b = 3$

.....
(2 marks)

16 $T = 7a^2 - a$

Work out the value of T when $a = -3$

.....
(2 marks)

Overall mark	/30
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