

(a) Simplify

(i) $b \times 3 \times e$

.....

(ii) $p^3 + p^3 + p^3 + p^3$

.....

(iii) $6g - 4h + 2g - 3h$

.....

(4)

(b) Solve $\frac{x}{3} = 15$

$x =$

(1)

(c) Factorise $5a - 3a^2$

.....

(2)

(d) Expand

(i) $2(4 - 3w)$

.....

(ii) $y^2(y + 10)$

.....

(3)

(Total for Question is 10 marks)

142- (4MA0-W 2012-Paper 1F-Q18)-ALGEBRA

Solve $3(x - 4) = 5x + 8$
Show your working clearly.

$x = \dots\dots\dots$

(Total for Question is 3 marks)

143- (4MA0-S 2013-Paper 1F-Q9)-ALGEBRA

(a) Simplify $3c^2 + 5c^2 - c^2$

$\dots\dots\dots$
(1)

(b) Simplify $4x - 3y + 5x - 2y$

$\dots\dots\dots$
(2)

(Total for Question is 3 marks)

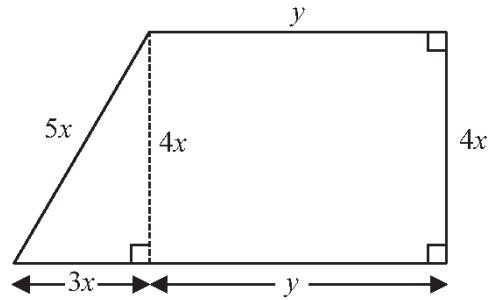


Diagram **NOT**
accurately drawn

The shape in the diagram is made from a rectangle and a right-angled triangle.
The diagram shows, in terms of x and y , the lengths, in centimetres, of the sides of the rectangle and of the triangle.

The perimeter, P cm, of the shape is given by the formula

$$P = 12x + 2y$$

(a) Work out the value of P when $x = 3$ and $y = 7$

$$P = \dots\dots\dots$$

(2)

(b) Work out the value of x when $P = 43$ and $y = 6.5$

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

(3)

(c) Find, in terms of x and y , a formula for the area, A cm², of the shape.
Give your answer as simply as possible.

$$A = \dots\dots\dots$$

(2)

(Total for Question 1 is 7 marks)

(a) Multiply out $6(n - 2)$

.....
(1)

(b) Factorise $p^2 - 5p$

.....
(2)

(c) Solve $\frac{7x - 3}{2} = x$

Show clear algebraic working.

$x =$
(3)

(Total for Question is 6 marks)

146- (4MA0-S 2013-Paper 1FR-Q13)-ALGEBRA

(a) Simplify

(i) $a \times 5 \times b \times c$

.....

(ii) $q^5 + q^5 + q^5$

.....

(iii) $7m + 6n - 2m - 9n$

.....

(4)

(b) Factorise $t^2 - 10t$

.....

(2)

(Total for Question is 6 marks)

147- (4MA0-S 2013-Paper 1FR-Q19)-ALGEBRA

Solve $x = \frac{7 - 2x}{3}$

Show clear algebraic working.

$x =$

(Total for Question is 3 marks)

(a) Simplify, leaving your answers in index form,

(i) $6^5 \times 6^2 \times 6$

.....

(ii) $(9^7)^2$

.....

(2)

(b) $\frac{5^n \times 5^3}{5^6} = 5^4$

Find the value of n .

$n =$

(2)

(Total for Question is 4 marks)

149- (4MA0-S 2013-Paper 1FR-Q24)-ALGEBRA

Solve the simultaneous equations

$$3x - y = 6$$

$$x + y = 12$$

Show clear algebraic working.

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

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

(Total for Question is 3 marks)

- (a) Solve $6x + 5 = 20$
Show clear algebraic working.

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

(2)

- (b) Solve $4(2y - 5) = 30$
Show clear algebraic working.

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

(3)

(Total for Question is 5 marks)

(a) $W = 3x + 4y$

Work out the value of W when $x = 2$ and $y = 6$

.....
(2)

(b) Simplify

(i) $m \times n \times 7$

(ii) $\frac{12y^4}{2}$

.....

(iii) $7g - 10h + 2g + 4h$

.....

.....
(4)

(c) Multiply out $3(2t - 4)$

.....
(1)

(Total for Question is 7 marks)

152- (4MA0-W 2013-Paper 1F-Q16)-ALGEBRA

Solve the simultaneous equations $y - 2x = 6$
 $y + 2x = 0$

Show clear algebraic working.

$x = \dots\dots\dots$

$y = \dots\dots\dots$

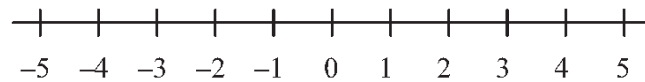
(Total for Question 152 is 3 marks)

153- (4MA0-W 2013-Paper 1F-Q18)-ALGEBRA

(i) Solve the inequalities $-2 < x + 2 \leq 5$

$\dots\dots\dots$

(ii) On the number line, represent the solution to part (i).



(Total for Question 153 is 4 marks)

(a) Simplify fully

(i) $4d^2 - 6d^2 + 5d^2$

.....

(ii) $7x + 5y - 3x - 8y$

.....

(3)

(b) Solve $6x - 5 = 16$

$x =$

(2)

(Total for Question is 5 marks)

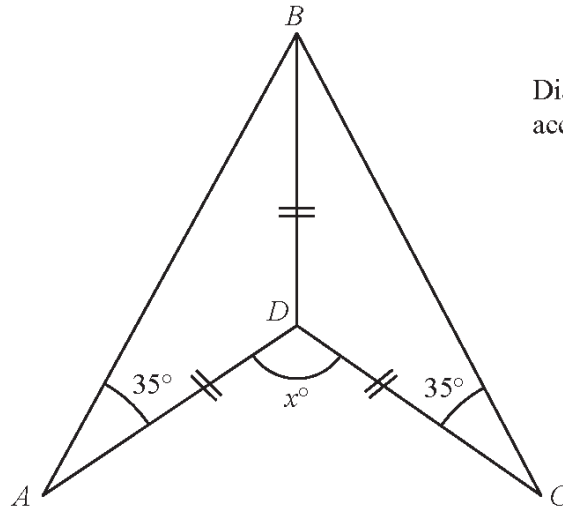


Diagram NOT accurately drawn

The diagram shows a quadrilateral $ABCD$.

The quadrilateral $ABCD$ is made from two identical isosceles triangles, ABD and CBD .

$DA = DB = DC$.

Angle $BAD = \text{Angle } BCD = 35^\circ$

Angle $ADC = x^\circ$

Work out the value of x .

$x = \dots\dots\dots$

(Total for Question is 4 marks)

(a) Simplify $8d \times 7d$

.....
(1)

(b) Expand $4(3e - 5)$

.....
(1)

(c) Factorise $f^2 - 2f$

.....
(2)

(d) $H = g^3 + 6g$

Work out the value of H when $g = 2$

$H =$
(2)

(Total for Question is 6 marks)

(a) Solve $x - 7 = 11$

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

(1)

(b) Solve $5y + 4 = 39$

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

(2)

(c) Solve $3(2z - 5) = 4z + 11$
Show clear algebraic working.

$$z = \dots\dots\dots$$

(3)

(Total for Question is 6 marks)

(a) Simplify $2a - 5b + 3a - 4b + a$

.....
(2)

(b) Factorise $7dg - 9de$

.....
(2)

(c) Expand and simplify $(x + 2)(x + 5)$

.....
(2)

(Total for Question is 6 marks)

(a) Simplify $5c - 6d - 2c + 4d$

.....
(2)

(b) Solve $4x + 5 = 17$

$x =$
(2)

(Total for Question is 4 marks)

(a) Simplify $5c \times 4c$

.....
(1)

(b) Factorise $4x + x^2$

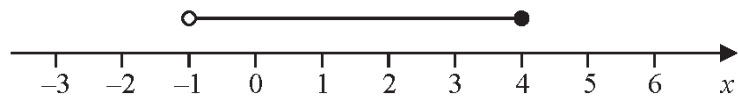
.....
(2)

(c) Work out the value of $y^3 + 5y$ when $y = 2$

.....
(2)

(Total for Question is 5 marks)

(a)



An inequality is shown on the number line.

Write down this inequality.

.....
(2)

(b) (i) Solve the inequality $2(y - 3) \geq 1$

(ii) Write down the lowest **integer** which satisfies this inequality.

.....
(4)

(Total for Question is 6 marks)

Simplify $5c + 6d - 3c - 5d$

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

(a) Factorise $t^2 + 6t$

.....
(2)

(b) Solve $7x - 5 = 5x - 4$
Show clear algebraic working.

$x =$
(3)

(c) Expand and simplify fully $4(2y + 3) + 2(y - 6)$

.....
(2)

(Total for Question is 7 marks)

(a) Simplify $\frac{y^8}{y^3}$

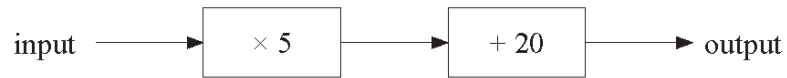
.....
(1)

(b) Solve the inequality $4(x + 3) > 8$

.....
(2)

(Total for Question is 3 marks)

Here is a number machine.



(a) Find the output when the input is 3

(1)

(b) Find the output when the input is -7

(1)

(c) Find the input when the output is 140

(1)

The input is x
The output is y .

(d) Write down a formula for y in terms of x .

(2)

(Total for Question 6 is 5 marks)

This rule gives the cost, in euros, of hiring a bicycle for a number of days.

$$\text{Cost in euros} = 8 \times (\text{number of days}) + 15$$

Marina hires a bicycle for 4 days.

(a) Work out the cost in euros.

euros

(2)

Cyril hires a bicycle for a number of days.

The cost is 71 euros.

(b) Work out the number of days

(2)

(Total for Question is 4 marks)

$$w = 4x - 5y$$

(a) $x = 7, y = 4$

Work out the value of w .

$$w = \quad (2)$$

$$w = 4x - 5y$$

(b) $w = 100, y = 22$

Work out the value of x .

$$x = \quad (2)$$

$$w = 4x - 5y$$

(c) $x = 6t, y = 2t$

Find a formula for w in terms of t .
Give your answer in its simplest form.

$$w = \quad (2)$$

(Total for Question 167 is 6 marks)

(a) Simplify $k^6 \times k^3$

(1)

(b) Simplify $5y \times 4y^2$

(2)

(Total for Question is 3 marks)

(a) Simplify

(i) $t^3 + t^3 + t^3 + t^3$

.....

(ii) $10x - 4y - 2x - y$

.....

(iii) $e \times e \times 7$

.....

(4)

(b) Factorise $g^2 + 4g$

.....

(2)

(Total for Question is 6 marks)

(a) $A = 2^2 \times 3 \times 5^2$

$$B = 2^3 \times 5$$

(i) Find a common factor of A and B .

(ii) Find a common multiple of A and B .

(b) $\frac{8^2 \times 8^3}{8^4} = 2^n$

Find the value of n .

.....
(3)

$n =$
(2)

(Total for Question is 5 marks)

