A2

Algebra exam review

1 Rectangular tiles have width x cm and height $(x + 7)$ cm.

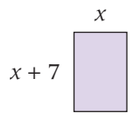

Diagram **NOT** accurately drawn

Some of these tiles are used to form a shape.

The shape is 6 tiles wide and 4 tiles high.

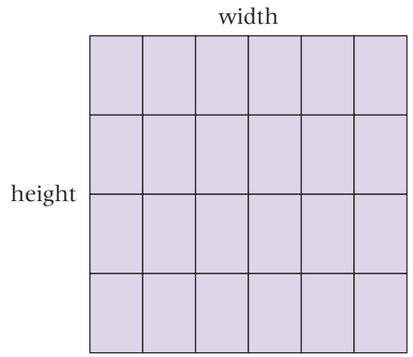

Diagram **NOT** accurately drawn

a Write down expressions, in terms of x, for the width and height of this shape.

width = ... cm

height = ... cm

(2)

b The width and the height of this shape are equal.

i Write down an equation in x.

.....

ii Solve your equation to find the value of x.

x = ...

(4)

(Total 6 marks)

2 $y = 4x - 1$

Work out the value of x when $y = -7$

$x =$ .....

(Total 2 marks)

3 Simplify fully $\dfrac{2x^2 - 5x - 12}{4x^2 - 9}$

.....

(Total 3 marks)

4

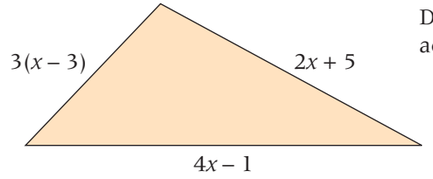

Diagram **NOT** accurately drawn

The lengths, in cm, of the sides of the triangle are $3(x - 3)$, $4x - 1$ and $2x + 5$

a Write down, in terms of x, an expression for the perimeter of the triangle.

..... cm

(1)

The perimeter of the triangle is 49 cm.

b Work out the value of x.

$x =$ .....

(2)

(Total 3 marks)

5 Simplify fully

a $2(3x + 4) - 3(4x - 5)$

.....

(2)

b $(2xy^3)^5$

.....

(2)

c $\dfrac{n^2 - 1}{n + 1} \times \dfrac{2}{n - 2}$

.....

(3)

(Total 7 marks)

6 a Solve $\dfrac{40 - x}{3} = 4 + x$

$x =$ .....

(3)

b Simplify fully $\dfrac{4x^2 - 6x}{4x^2 - 9}$

.....

(3)

(Total 6 marks)

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

$x =$ .....

(Total 4 marks)

8 Solve $\frac{2}{x+1}+\frac{3}{x-1}=\frac{5}{x^2-1}$

$x =$ .....

(Total 4 marks)

9 Simplify fully $\frac{2}{x-1}+\frac{x-11}{x^2+3x-4}$

.....

(Total 6 marks)