A1 Algebra exam review

1 a Expand $3(2t + 5)$

.....

(1)

b Expand $y(y^2 - 3y)$

.....

(2)

c Expand and simplify $(x + 3)(x + 7)$

.....

(2)

d Simplify $p^4q^2 \times p^3q^6$

.....

(2)

(Total 7 marks)

2 a Expand and simplify $(3x - 5)(4x + 7)$

.....

(2)

b Simplify $(2p^4)^3$

.....

(2)

c Simplify $(64y^6)^{\frac{2}{3}}$

.....

(2)

(Total 6 marks)

3 **a** Simplify $k^5 \div k^2$

.....

(1)

b Expand and simplify

i $4(x + 5) + 3(x - 7)$

.....

ii $(x + 3y)(x + 2y)$

.....

(4)

c Factorise $(p + q)^2 + 5(p + q)$

.....

(1)

d Simplify $(m^{-4})^{-2}$

.....

(1)

e Simplify $2t^2 \times 3r^3t^4$

.....

(2)

4 **a** Show that $(2a - 1)^2 - (2b - 1)^2 = 4(a - b)(a + b - 1)$

.....

(3)

5 **a** Factorise completely $10x^2 - 2x$

.....

(2)

b Factorise $x^2 - 9$

.....

(1)

c Factorise $3x^2 - 13x + 4$

.....

(2)

(Total 5 marks)

6 The diagram below shows a 6-sided shape.
All the corners are right angles.
All measurements are given in centimetres.

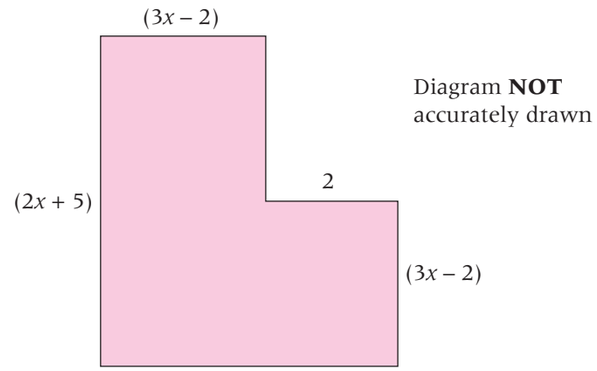

Diagram **NOT** accurately drawn

The area of the shape is 25 cm^2.

Show that $6x^2 + 17x - 39 = 0$

(Total 4 marks)

7 **a** Factorise $9x^2 - 6x + 1$

.....

(2)

8 **a** Factorise $x^2 + x$

.....

(1)

b Factorise $y^2 - 2y - 35$

.....

(2)

(Total 3 marks)