

**Q1.**

(a) Expand and simplify  $(2x + 1)(x - 3)$

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Answer .....

**(2)**

(b) Factorise  $y^2 + 2y - 24$

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Answer .....

**(2)**

(c) Simplify  $(2xy^3)^5$

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Answer .....

**(2)**

**(Total 6 marks)**

**Q2.**

Factorise  $x^2 + 9x + 14$

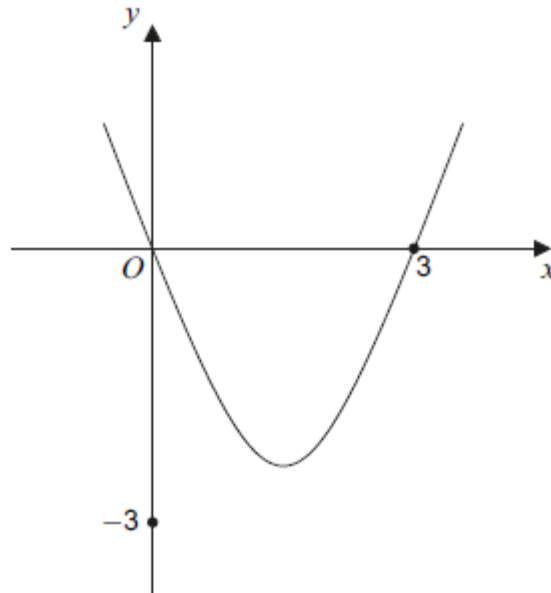
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Answer .....

**(Total 2 marks)**

**Q3.**

The diagram shows a sketch of  $y = x^2 - 3x$



- (a) Sketch the line  $y = \frac{1}{2}(x-3)$  on the diagram.

Mark the value where this line crosses the y-axis.

(2)

- (b) By factorising  $x^2 - 3x$ , or otherwise, work out the smaller solution of

$$x^2 - 3x = \frac{1}{2}(x-3)$$

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$x =$  .....

(2)  
(Total 4 marks)

**Q4.**Factorise  $4x^2 - y^2$

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Answer .....

(Total 2 marks)

**Q5.**Factorise  $9m^2 - k^2$

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Answer .....

(Total 2 marks)

**Q6.(a)** Expand and simplify  $(2x + 1)(x - 2)$

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Answer .....

(3)

(b) Factorise fully  $3x^2 - 48y^2$

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Answer .....

(3)  
(Total 6 marks)

Q7.(a) Factorise  $n^2 + 7n + 6$

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Answer .....

(2)

(b) Hence, or otherwise, write 176 as the product of its prime factors.  
Give your answer in index form.

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Answer .....

(3)  
(Total 5 marks)