

1 (a) Factorise $5x^2 + 6x - 8$

[2 marks]

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

Answer $(5x - 4)(x + 2)$ (2)

2 Circle the factor of $x^2 - 5x$
 $x(x-5)$

[1 mark]

$x - 1$

$-5x$

$x - 5$

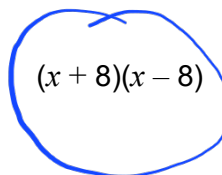
$5x$

- 3 Factorise $x^2 - 64$
Circle your answer.

[1 mark]

$$(x + 8)^2$$

$$(x - 8)^2$$


$$(x + 8)(x - 8)$$

$$x(x - 64)$$

4

Factorise $3x^2 - 16x - 12$

[2 marks]

$$x = \frac{16 \pm \sqrt{(-16)^2 - 4(3)(-12)}}{2(3)}$$

$$= \frac{16 \pm \sqrt{400}}{6} = \frac{16 \pm 20}{6} = 6 \text{ or } -\frac{2}{3}$$

$$= (x - 6)(3x + 2)$$

Answer $(3x + 2)(x - 6)$ 2

- 5 (a) By factorising $x^2 + x - 90$ work out the value of x .

You **must** show your working

[2 marks]

$$(x-9)(x+10)$$

$$x = 9 \text{ or } x = -10$$

$x = 9$ only since length can't be negative

$$x = 9$$

6

Factorise fully $x^3 - 49x$

[2 marks]

$$x(x^2 - 49) \text{ (1)}$$

$$x(x-7)(x+7) \text{ (1)}$$

Answer $x(x-7)(x+7)$

7 (a) Factorise $8x^2 - 18x - 35$

[2 marks]

$$(4x + 5)(2x - 7) \quad (2)$$

Answer $(4x + 5)(2x - 7)$

8 $(x-9) = \frac{2(6-x^2)}{x+3}$ and $x = \frac{d \pm \sqrt{e}}{f}$

Work out one set of possible values for d , e and f .

[4 marks]

$$(x-9)(x+3) = 12 - 2x^2$$

$$x^2 - 6x - 27 = 12 - 2x^2$$

$$3x^2 - 6x - 39 = 0$$

$$x^2 - 2x - 13 = 0$$

$$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(-13)}}{2(1)}$$

$$= \frac{2 \pm \sqrt{56}}{2}$$

$$d=2, e=56, f=2$$

$$d = 2$$

$$e = 56$$

$$f = 2$$