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]

$x - 1$ $-5x$ $x - 5$ $5x$

0

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]

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

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

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

(2)

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

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

You **must** show your working

[2 marks]

$(x-9)(x+10)$ (1)

$x = 9$ or $x = -10$

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

$x =$ 9 (1)

6 Factorise fully $x^3 - 49x$

[2 marks]

$x(x^2 - 49)$ (1)

$x(x-7)(x+7)$ (1)

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

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

[2 marks]

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

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

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

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

[4 marks]

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

$x^2-6x-27 = 12-2x^2$ ✓1

$3x^2-6x-39 = 0$ ✓1

$x^2-2x-13 = 0$ ✓1

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

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

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

$d =$ 2

$e =$ 56 ✓1

$f =$ 2