2.9 Factorisation

1. Factorise the following:

(a)	$2x + 4$	(b)	$9 - 3x$
(c)	$2 + 10x$	(d)	$-5 - 15x$
(e)	$x^2 + 2x$	(f)	$x - 3x^2$
(g)	$4x + 2x^2$	(h)	$3x^2 - 9x$
(i)	$10x - 5x^2$	(j)	$7x^2 + 21$
(k)	$3x^2 - x^3$	(l)	$2x + 8x^3$
(m)	$2x^3 + 10x^2$	(n)	$4x^2 - 4$

2. The following expressions have been partly factorised.
Complete the factorisation.

(a)	$2x^2 - 4x = 2\left(x^2 - 2x\right) = \ ?$	(b)	$10x - 5x^2 = x\left(10 - 5x\right) = \ ?$
(c)	$4x^3 + 8x = 4\left(x^3 + 2x\right) = \ ?$	(d)	$8xy + 16x^2 = x\left(8y + 16x\right) = \ ?$
(e)	$5xy + 10x^2y^2 = 5\left(xy + 2x^2y^2\right) = \ ?$		

3. Factorise the following:

(a)	$10a - 15b$	(b)	$50py - 120p$
(c)	$24abc - 8ab$	(d)	$6abc + 12bcd$
(e)	$16m^2 + 12n^2$	(f)	$p^2y + p^2y^2$
(g)	$18s^2t - 12st^2$	(h)	$10a + 15a^2$
(i)	$c - c^2$	(j)	$2a^2b^2 - 8a^2b$
(k)	$m^2n - mnl$	(l)	$6xy - 3y + 9x$
(m)	$pqr + p^2 + pr$	(n)	$abc + a^2b + bc$
(o)	$8abc + 6ab^2c + 4abc^2$	(p)	$5s^2t - 3st - 4st^2$