Factorising 2 - Trinomials

1. Factorise each expression.

(a) $x^2 + 3x + 2$
$= (x + 2)(x + \ldots)$

(b) $x^2 + 5x + 4$ (c) $x^2 + 8x + 15$ (d) $x^2 + 10x + 24$

(e) $a^2 + 12a + 11$ (f) $b^2 + 20b + 100$ (g) $y^2 + 14y + 24$ (h) $x^2 + 4x + 3$

2. Factorise each expression, be careful with your negatives!

(a) $x^2 + 10x - 24$
$= (x + 12)(x - \ldots)$

(b) $x^2 + 4x - 32$ (c) $x^2 + 3x - 4$ (d) $x^2 + 5x - 14$

(e) $a^2 - 3a - 10$ (f) $b^2 - 2b - 35$ (g) $b^2 - 6b - 7$ (h) $x^2 - 8h - 20$

(i) $f^2 - 2f - 15$ (j) $b^2 + 4b - 21$ (k) $x^2 - x - 12$ (l) $r^2 + r - 30$

3. Factorise each trinomial.

(a) $2x^2 + 7x + 3$
$= (2x + 1)(x + \ldots)$

(b) $3y^2 + 14y + 15$ (c) $3a^2 - 2a - 8$ (d) $3x^2 - 5x - 2$

(e) $5y^2 + 4y - 1$ (f) $5x^2 + 9x - 2$ (g) $5a^2 + 6a - 27$ (h) $7a^2 + 6a - 16$

(i) $3b^2 + 17b - 6$ (j) $5y^2 - 2y - 7$ (k) $6x^2 - 23x - 4$ (l) $3a^2 + 25a + 8$

(m) $6d^2 - 7d + 2$ (n) $8y^2 - 10y + 2$ (o) $8x^2 - 10x + 2$ (p) $10x^2 - 9x - 7$

4. Factorise the trinomials.

(a) $30 - a - a^2$
$= (6 + a)(\_ - a)$

(b) $12 - x - x^2$ (c) $24 - 2y - y^2$ (d) $18 + 7y - y^2$

(e) $5 + 14e - 3e^2$
$= (5 - e)(1 + \_\_)$

(f) $20 + 3a - 2a^2$ (g) $6 + 5a - 6a^2$ (h) $2 - 5a - 3a^2$

(i) $8 + 14x - 15x^2$ (j) $3 - y - 4y^2$ (k) $24 + 2b - 15b^2$ (l) $16 - 18x - 9x^2$

5. Look for the common factor first!

(a) $3x^2 - 12x + 12$
$= 3(x^2 - 4x + 4)$
$= 3(x - 2)(\quad)$

(b) $2x^2 + 22x + 60$ (c) $5a^2 + 20a - 60$ (d) $2y^2 + 10y - 100$

(e) $4x^2 - 14x - 30$ (f) $18x^2 - 3x - 6$ (g) $10x^2 + 4x - 6$ (h) $40x^2 + 2x - 24$