

FACTORISING - PRACTICE QUESTIONS



metatutor

1.

Factorise fully:

$$(a) 10x + 8 = 2(5x + 4)$$

$$(b) 4x + 6 = 2(2x + 3)$$

$$(c) 15x + 25 = 5(3x + 5)$$

$$(d) 9x - 12 = 3(3x - 4)$$

$$(e) 20x + 70 = 10(2x + 7)$$

$$(f) 33x - 55 = 11(3x - 5)$$

$$(g) 12x - 20 = 4(3x - 5)$$

$$(h) 18x + 30 = 6(3x + 5)$$

$$(i) 40x + 16 = 8(5x + 2)$$

$$(j) 20x - 35 = 5(4x - 7)$$

$$(k) 27x + 36 = 9(3x + 4)$$

2.

Factorise fully:

$$(a) 12x^2 + 14x = 2x(6x + 7)$$

$$(b) 40x^2 - 50x = 10x(4x - 5)$$

$$(c) 8x^2 + 12x = 4x(2x + 3)$$

$$(d) 15x^2 - 24x = 3x(5x - 8)$$

$$(e) 6x^2 + 10x = 2x(3x + 5)$$

$$(f) 14x^2 + 21x = 7x(2x + 3)$$

$$(g) 8x^2 - 24x = 8x(x - 3)$$

$$(h) 44x^2 - 33x = 11x(4x - 3)$$

$$(i) 30x^2 - 36x = 6x(5x - 6)$$

$$(j) 18x^2 - 45x = 9x(2x - 5)$$

$$(k) 32x^2 + 24x = 8x(4x + 3)$$

3.

Factorise fully:

$$(a) 20x - 18 = 2(10x - 9)$$

$$(b) 30x^2 + 50x = 10x(3x + 5)$$

$$(c) 18x + 15 = 3(6x + 5)$$

$$(d) 24x + 28 = 4(6x + 7)$$

$$(e) 18x^2 - 27x = 9x(2x - 3)$$

$$(f) 16x + 30 = 2(8x + 15)$$

$$(g) 24x - 9x^2 = 3x(8 - 3x)$$

$$(h) 14x^2 + 35x = 7x(2x + 5)$$

$$(i) 32x^2 + 44x = 4x(8x + 11)$$

$$(j) 77 - 55x = 11(7 - 5x)$$

$$(k) 45x + 60 = 15(3x + 4)$$

4.

Factorise fully:

$$(a) x^2 + 2x = x(x + 2)$$

$$(b) x^2 - 10x = x(x - 10)$$

$$(c) x^2 + 12x = x(x + 12)$$

$$(d) x^2 - 8x = x(x - 8)$$

$$(e) x^2 - 20x = x(x - 20)$$

$$(f) x^2 + 5x = x(x + 5)$$

$$(g) x^2 + 25x = x(x + 25)$$

$$(h) 4x^2 - 5x = x(4x - 5)$$

$$(i) 16x^2 + 9x = x(16x + 9)$$

$$(j) x^2 - 7x = x(x - 7)$$

$$(k) 9x^2 + x = x(9x + 1)$$

5.

Factorise fully:

$$(a) 6x + 16 = 2(3x + 8)$$

$$(b) x^2 - 11x = x(x - 11)$$

$$(c) 7x - 21 = 7(x - 3)$$

$$(d) 18x^2 + 30x = 6x(3x + 5)$$

$$(e) 20x^2 - 60x = 20x(x - 3)$$

$$(f) 5x - x^2 = x(5 - x)$$

$$(g) 25x - 35 = 5(5x - 7)$$

$$(h) 8 - 2x = 2(4 - x)$$

$$(i) 15x^2 + 27x = 3x(5x + 9)$$

$$(j) x^2 + x = x(x + 1)$$

$$(k) 16x + 24 = 8(2x + 3)$$

$$(l) 28x - 36x^2 = 4x(7 - 9x)$$

$$(m) 19x + 10x^2 = x(19 + 10x)$$

$$(n) x^2 - 30x = x(x - 30)$$

$$(o) 20x + 28 = 4(5x + 7)$$

$$(p) 54 - 45x = 9(6 - 5x)$$

$$(q) 16x^2 + 40x = 8x(2x + 5)$$

$$(r) 24x + 36 = 12(2x + 3)$$

$$(s) 4x^2 - 16x = 4x(x - 4)$$

$$(t) 41x - x^2 = x(41 - x)$$

$$(u) 8x + 36 = 4(2x + 9)$$

$$(v) 21x^2 + 6x = 3x(7x + 2)$$

$$(w) 48x + 60 = 12(4x + 5)$$

$$(x) 200x^2 + 350x = 50x(4x + 7)$$

6.

Factorise:

$$(a) x^2 + 6x + 5 = (x+5)(x+1)$$

$$(b) x^2 + 6x + 8 = (x+4)(x+2)$$

$$(c) x^2 + 7x + 10 = (x+5)(x+2)$$

$$(d) x^2 + 7x + 12 = (x+3)(x+4)$$

$$(e) x^2 + 8x + 15 = (x+3)(x+5)$$

$$(f) x^2 + 9x + 20 = (x+4)(x+5)$$

$$(g) x^2 + 15x + 14 = (x+1)(x+14)$$

$$(h) x^2 + 6x + 9 = (x+3)(x+3)$$

$$(i) x^2 + 11x + 24 = (x+8)(x+3)$$

$$(j) x^2 + 9x + 18 = (x+6)(x+3)$$

$$(k) x^2 + 13x + 40 = (x+8)(x+5)$$

$$(l) x^2 + 12x + 36 = (x+6)(x+6)$$

7.

Factorise:

$$(a) x^2 + 2x - 8 = (x + 4)(x - 2)$$

$$(b) x^2 - 4x - 5 = (x - 5)(x + 1)$$

$$(c) x^2 + 14x - 15 = (x + 15)(x - 1)$$

$$(d) x^2 - 4x - 12 = (x - 6)(x + 2)$$

$$(e) x^2 - 5x - 14 = (x - 7)(x + 2)$$

$$(f) x^2 + 6x - 16 = (x + 8)(x - 2)$$

$$(g) x^2 - x - 20 = (x - 5)(x + 4)$$

$$(h) x^2 + 7x - 30 = (x + 10)(x - 3)$$

$$(i) x^2 + x - 12 = (x + 4)(x - 3)$$

$$(j) x^2 - 10x + 25 = (x - 5)(x - 5)$$

$$(k) x^2 - 14x + 24 = (x - 12)(x - 2)$$

$$(l) x^2 - 15x + 36 = (x - 12)(x - 3)$$

8.

Factorise fully:

$$(a) 10x + 18 = 2(5x + 9)$$

$$(b) x^2 + 12x + 20 = (x + 10)(x + 2)$$

$$(c) x^2 + 26x = x(x + 26)$$

$$(d) x^2 + 7x - 8 = (x + 8)(x - 1)$$

$$(e) 16x^2 + 28x = 4x(4x + 7)$$

$$(f) 25x - 55x^2 = 5x(5 - 11x)$$

$$(g) x^2 - 7x - 18 = (x - 9)(x + 2)$$

$$(h) 7x^2 + 11x = x(7x + 11)$$

$$(i) x^2 + 12x + 32 = (x + 8)(x + 4)$$

$$(j) x^2 - 10x + 24 = (x - 6)(x - 4)$$

$$(k) 40x - x^2 = x(40 - x)$$

$$(l) 25x^2 + 100x = 25x(x + 4)$$

9.

Factorise fully:

$$(a) x^2 + 18x = x(x+18)$$

$$(b) y^2 + 10y + 21 = (y+7)(y+3)$$

$$(c) 44z - 33 = 11(4z-3)$$

$$(d) 27w^2 + 45w = 9w(3w+5)$$

$$(e) t^2 - 11t - 12 = (t-12)(t+1)$$

$$(f) m^2 + 15m + 50 = (m+10)(m+5)$$

$$(g) 20 - 28a = 4(5-7a)$$

$$(h) 12d - d^2 = d(12-d)$$

$$(i) c^2 + 3c - 18 = (c+6)(c-3)$$

$$(j) 36p^2 + 60p = 12p(3p+5)$$

$$(k) j^2 - 15j - 16 = (j-16)(j+1)$$

$$(l) k^2 - 14k + 49 = (k-7)(k-7)$$

10.

Factorise fully:

- (a) $9ab - 3a = 3a(3b - 1)$
- (b) $5c + 7cd = c(5 + 7d)$
- (c) $18e^2 + 20ef = 2e(9e + 10f)$
- (d) $30gh - 50gh^2 = 10gh(3 - 5h)$
- (e) $21k - 28jk = 7k(3 - 4j)$
- (f) $33mn + 44m^2 = 11m(3n + 4m)$
- (g) $12p^2q - 24pq = 12pq(p - 2)$
- (h) $11rs^2 + 10r^2s = rs(11s + 10r)$
- (i) $20t^2 + 45tu^2 = 5t(4t + 9u^2)$
- (j) $81w^2 - 90vw = 9w(9w - 10vw)$
- (k) $28x^2y + 49xy^2 = 7xy(4x + 7y)$
- (l) $8yz - 18z^2 = 2z(4y - 9z)$
- (m) $7ab^2 + ab = ab(7b + 1)$
- (n) $24mp^2 - 30m^2p = 6mp(4p - 5m)$
- (o) $k^2 - 10ak^2 = k^2(1 - 10a)$
- (p) $10bx + 16x^2 = 2x(5b + 8x)$