FACTORISING SINGLE BRACKETS

Fully factorise each of the following expressions.

1) $4x + 8 = \mathbf{4(x + 2)}$

2) $3b + 21 = \mathbf{3(b + 7)}$

3) $2f + 6 = \mathbf{2(f + 3)}$

4) $4h - 4 = \mathbf{4(h - 1)}$

5) $10h - 35 = \mathbf{5(2h - 7)}$

6) $3g - 12 = \mathbf{3(g - 4)}$

7) $14y + 21 = \mathbf{7(2y + 3)}$

8) $-4j + 24 = \mathbf{-4(j - 6)}$

9) $9 - 3u = \mathbf{3(3 - u)}$

10) $5b^2 + 20b = \mathbf{5b(b + 4)}$

11) $2u^2 + 14u = \mathbf{2u(u + 7)}$

12) $24g^2 + 40g = \mathbf{8g(3g + 5)}$

13) $3b^2 - 18b = \mathbf{3b(b - 6)}$

14) $5y - y^2 = \mathbf{y(5 - y)}$

15) $3p^2 - p^3 = \mathbf{p^2(3 - p)}$

16) $d^2 + de = \mathbf{d(d + e)}$

17) $b^7 - 8b^6 = \mathbf{b^6(b - 8)}$

18) $-6l^3 - 30l = \mathbf{-6l(l^2 + 5)}$

19) $21u^2 - 24u = \mathbf{3u(7u - 8)}$

20) $-2k^3j + 7k^5 = \mathbf{k^3(-2j + 7k^2)}$

21) $8i^3 - 8i^2j = \mathbf{8i^2(i - j)}$

22) $t^4 - 4t^3 = \mathbf{t^3(t - 4)}$

23) $20y^2 - 15y = \mathbf{5y(4y - 3)}$

24) $35a^3b - 49a^2b = \mathbf{7a^2b(5a - 7)}$

25) $16m^2n + 24mn^2 = \mathbf{8mn(2m + 3n)}$

26) $63p^4q^2 - 27p^2q^3 = \mathbf{9p^2q^2(7p^2 - 3q)}$

27) $18x^3y - 30x^2y^2 = \mathbf{6x^2y(3x - 5y)}$

28) $-14rs^2 + 21r^2s = \mathbf{-7rs(2s - 3r)}$

29) $8t^3 - 32t^2 = \mathbf{8t^2(t - 4)}$

30) $56a^4\,b^2 - 70a^2b^3 = \mathbf{14a^2b^2(4a^2 - 5b)}$

31) $45e^3f^5 + 15e^2f^3 = \mathbf{15e^2f^3(3ef^2 + 1)}$

32) $18m^5n^3 - 24m^3n^6 = \mathbf{6m^3n^3(3m^2 - 4n^3)}$

33) $96x^7y^4z^2 + 60x^5y^3z^4$

$= \mathbf{12x^5y^3z^2(8x^2y + 5z^2)}$

34) $-32p^6q^2 + 48p^4q^5 = \mathbf{16p^4q^2(-2p^2 + 3q^3)}$

35) $63r^3s^7 - 21r^2s^5 = \mathbf{21r^2s^5(3rs^2 - 1)}$

36) $36h^6i^8 + 54h^4i^5 = \mathbf{18h^4i^5(2h^2i^3 + 3)}$

37) $28u^5v^4w^3 - 35u^3v^2w^7$

$= \mathbf{7u^3v^2w^3(4u^2v^2 - 5w^4)}$

38) $120y^8z^3 - 96y^6z^5 = \mathbf{24y^6z^3(5y^2 - 4z^2)}$

39) $75k^9l^4 + 45k^6l^7 = \mathbf{15k^6l^4(5k^3 + 3l^3)}$

40) $84a^5b^9c^4 - 60a^3b^6c^8$

$= \mathbf{12a^3b^6c^4(7a^2b^3 - 5c^4)}$

41) $64t^7 - 40t^5s^3 = \mathbf{8t^5(8t^2 - 5s^3)}$

42) $52m^4n^3p^2 + 78m^2n^5p$

$= \mathbf{26m^2n^3p(2m^2p + 3n^2)}$

43) $90x^{10}y^5 - 72x^7y^6 + 54x^6y^5$

$= \mathbf{18x^6y^5(5x^4 - 4xy + 3)}$

44) $28q^8r^3s^2 + 42q^6r^5s - 14q^5r^3s^4$

$= \mathbf{14q^5r^3s(2q^3s + 3qr^2 - s^3)}$