

Knowledge Questions

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Simplify fully.

1) $2x^3y^2(5x^2y - xy^3 + 7y) = \underline{10x^5y^3 - 2x^4y^5 + 14x^3y^3}$

2) $-2(3x+5y) - (4x-2y) = \underline{-10x - 8y}$

3) $2(3x-10)^2 = \underline{18x^2 - 120x + 200}$

Application Questions (2 marks each) Answers only.

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Factor fully.

Multi 1. $7x^4 - 28x^2 = \underline{7x^2(x^2 - 4) = 7x^2(x+2)(x-2)}$

PS 2. $x^2 - 22x + 121 = \underline{(x-11)^2 \text{ or } (x-11)(x-11)}$

CT 3. $5x^2 - 12x + 7 = \underline{(5x-7)(x-1)}$

ST 4. $x^2 + 7xy - 18y^2 = \underline{(x+9y)(x-2y)}$

DoFS 5. $x^2 - 64 = \underline{(x+8)(x-8)}$

CF 6. $16x^5y^2 - 24x^3y + 12x^2y^3 = \underline{4x^2y(4x^3y - 6x + 3y^2)}$

ST 7. $x^2 - 5x - 14 = \underline{(x-7)(x+2)}$

Multi 8. $15x^2 - 5x - 20 = \underline{5(3x^2 - x - 4) = 5(3x-4)(x+1)}$

CT 9. $8x^2 + 10x - 3 = \underline{(4x-1)(2x+3)}$

DoFS 10. $36x^2 - 25y^2 = \underline{(6x+5y)(6x-5y)}$

PS 11. $9x^2 + 60xy + 100y^2 = \underline{(3x+10y)(3x+10y) = (3x+10y)^2}$

Multi 12. $40x^3 - 250xy^2 = \underline{10x(4x^2 - 25y^2) = 10x(2x+5y)(2x-5y)}$

Multi 13. $6x^2y - 22xy - 8y = \underline{2y(3x^2 - 11x - 4) = 2y(3x+1)(x-4)}$

Multi 14. $3x^4 - 48 = \underline{3(x^4 - 16) = 3(x^2+4)(x^2-4) = 3(x^2+4)(x+2)(x-2)}$