

Section A

$$\begin{aligned} \textcircled{1} \quad x^2 + 5x + 6 \\ = (x+3)(x+2) \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 2x^2 + 5x + 3 \\ = (2x+3)(x+1) \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad 3x^2 + 4x + 1 \\ = (3x+1)(x+1) \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 3x^2 + 30x + 75 \\ = 3(x^2 + 10x + 25) \\ = 3(x+5)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad x^2 + 15x + 44 \\ = (x+4)(x+11) \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad x^2 + 7x + 6 \\ = (x+6)(x+1) \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad 2x^2 + 22x + 48 \\ = 2(x^2 + 11x + 24) \\ = 2(x+3)(x+8) \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad x^2 + 4x - 32 \\ = (x+8)(x-4) \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad 4x^2 + 12x + 9 \\ = (2x+3)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad 24x^2 + 22x - 10 \\ = 2(12x^2 + 11x - 5) \\ = 2(4x+5)(3x-1) \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad x^2 + x - 72 \\ = (x+9)(x-8) \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad 3x^2 - 20x - 7 \\ = (3x+1)(x-7) \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad x^3 - 11x^2 + 28x \\ = x(x^2 - 11x + 28) \\ = x(x-7)(x-4) \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad 2x^2 + 11x - 6 \\ = (2x-1)(x+6) \end{aligned}$$

$$\begin{aligned} \textcircled{15} \quad 2x^2 + 5x - 3 \\ = (2x-1)(x+3) \end{aligned}$$

$$\begin{aligned} \textcircled{16} \quad x^2 - 3x - 10 \\ = (x-5)(x+2) \end{aligned}$$

$$\begin{aligned} \textcircled{17} \quad 4x^2 - 12x + 9 \\ = (2x-3)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{18} \quad 3x^2 + 2x - 5 \\ = (3x+5)(x-1) \end{aligned}$$

$$\begin{aligned} \textcircled{19} \quad 6x^2 - x - 2 \\ = (3x-2)(2x+1) \end{aligned}$$

$$\begin{aligned} \textcircled{20} \quad 9x^2 - 18x + 8 \\ = (3x-4)(3x-2) \end{aligned}$$

Section B

$$\textcircled{1} x^2 - 16$$

$$= (x-4)(x+4)$$

$$\textcircled{2} x^2 - 25$$

$$= (x-5)(x+5)$$

$$\textcircled{3} 64m^2 - 25$$

$$= (8m-5)(8m+5)$$

$$\textcircled{4} 4p^2 - 9q^2$$

$$= (2p-3q)(2p+3q)$$

$$\textcircled{5} 9x^2y^2 - 49$$

$$= (3xy-7)(3xy+7)$$

$$\textcircled{6} x^4 - 25$$

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

$$\textcircled{7} 64 - y^2$$

$$= (8-y)(8+y)$$

$$\textcircled{8} 144 - 25p^2$$

$$= (12-5p)(12+5p)$$

$$\textcircled{9} 9x^4 - 4y^2$$

$$= (3x^2-2y)(3x^2+2y)$$

$$\textcircled{10} x^2 + 4x + 4$$

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

$$\textcircled{11} y^2 + 8y + 16$$

$$= (y+4)^2$$

$$\textcircled{12} m^2 - 10m + 25$$

$$= (m-5)^2$$

$$\textcircled{13} x^2 - 4x + 16$$

= Not Factorable

$$\textcircled{14} a^2 + 8ab + 16b^2$$

$$= (a+4b)^2$$

$$\textcircled{15} 36x^2 + 12x + 1$$

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

$$\textcircled{16} 25x^2 - 30xy + 9y^2$$

$$= (5x-3y)^2$$

$$\textcircled{17} 9x^2y^2 - 6xy + 1$$

$$= (3xy-1)^2$$

$$\textcircled{18} 49x^2 + 1 + 14x$$

$$= 49x^2 + 14x + 1$$

$$= (7x+1)^2$$

$$\textcircled{19} 9x^2 - 16$$

$$= (3x-4)(3x+4)$$

$$\textcircled{20} 9x^2 + 24x + 16$$

$$= (3x+4)^2$$

$$\textcircled{21} 9x^2 - 36$$

$$= 9(x^2 - 4)$$

$$= 9(x-2)(x+2)$$

$$\textcircled{22} 2x^2 + 8y + 8y^2$$

$$= 2(x^2 + 4y + 4y^2)$$

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

$$\textcircled{23} x^2y + 10xy + 25y$$

$$= y(x^2 + 10x + 25)$$

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

$$\textcircled{24} 8x^2 - 72$$

$$= 8(x^2 - 9)$$

$$= 8(x-3)(x+3)$$

$$\begin{aligned} (25) \quad & 4x^3 - 9x \\ & = x(4x^2 - 9) \\ & = x(2x - 3)(2x + 3) \end{aligned}$$

$$\begin{aligned} (26) \quad & 4x^2 - 8x + 4 \\ & = 4(x^2 - 2x + 1) \\ & = 4(x - 1)^2 \end{aligned}$$

$$\begin{aligned} (27) \quad & 2x^2 + 8 \\ & = 2(x^2 + 4) \end{aligned}$$