

$$\textcircled{1} \left(\frac{3A^3}{3A^{-1}} + \frac{5A^2}{3A} - \frac{4}{3A} \right) (3A)$$

$$\left(A^2 + \frac{5A}{3} - \frac{4}{3A} \right)$$

$$\textcircled{2} \left(\frac{2}{3} A^2 B^2 - \frac{1}{4} A^2 B^4 + \frac{5}{6} A B^4 - \frac{2}{5} B^5 \right) \left(-\frac{1}{2} A B^2 \right)$$

$$\frac{\frac{2}{3} A^2 B^2}{\frac{1}{2} A B^2} - \frac{\frac{1}{4} A^2 B^4}{\frac{1}{2} A B^2} + \frac{\frac{5}{6} A B^4}{\frac{1}{2} A B^2} - \frac{\frac{2}{5} B^5}{\frac{1}{2} A B^2}$$

$$\frac{3}{4} A B^{-1} - \frac{4}{2} A B^2 + \frac{6}{16} B^2 - \frac{5}{4} A B^3$$

$$\textcircled{3} (x^4 - 2x^3 - 11x^2 + 30x - 20) (x^2 - 3x - 2)$$

$$\begin{array}{r} x^2 + x - 6 \\ x^2 - 3x - 2 \overline{) x^4 - 2x^3 - 11x^2 + 30x - 20} \\ \underline{-x^4 + 3x^3 + 2x^2} \\ + 1x^3 - 9x^2 + 30x \\ \underline{1x^3 + 3x^2 + 2x} \\ - 6x^2 + 32x - 20 \\ \underline{+ 6x^2 - 18x - 12} \\ \boxed{+ 14x - 8} \\ R \end{array}$$

$$R = x^2 + x - 6 \left(\frac{+ 14x - 8}{x^2 - 3x - 2} \right)$$

$$\textcircled{1} (x^6 + 5x^4 + 3x^2 - 2x) \div (x^2 - x + 3)$$

$$x^2 - x + 3 \overline{) x^6 + 0x^5 + 5x^4 + 0x^3 + 3x^2 - 2x}$$

$$\underline{-x^6 + 4x^5 - 3x^4}$$

$$\underline{1x^5 + 2x^4 + 0x^3}$$

$$\underline{-3x^4 - 3x^3 + 3x^2}$$

$$\underline{-6x^2 - 2x}$$

$$R = x^4 + x^3 + 3x^2 - 6 \left(\frac{-8x + 18}{x^2 - x + 3} \right)$$

①

$$\begin{array}{r}
 x^2 - 3x - 2 \overline{) x^4 - 2x^3 - 11x^2 + 30x - 20} \\
 \underline{-x^4 + 3x^3} \\
 1x^3 - 9x^2 + 30x \\
 \underline{-1x^3 + 3x^2 + 2x} \\
 -6x^2 + 32x - 20 \\
 \underline{-6x^2 + 18x - 12} \\
 14x - 32
 \end{array}$$

$$x^2 + x - 6 \left(\frac{14x - 32}{x^2 - 3x - 2} \right)$$

$$(x^6 - 5x^4 + 3x^2 - 2x)(x^2 - x + 3)$$

$$\begin{array}{r}
 x^4 + x^3 - x^2 \\
 x^2 - x + 3 \overline{) x^6 - 0x^5 - 5x^4 + 0x^3 + 3x^2 - 2x} \\
 \underline{-x^6 + 1x^5 - 3x^4} \\
 1x^5 - 8x^4 + 0x^3 \\
 \underline{-1x^5 + 1x^4 - 3x^3} \\
 -9x^4 - 3x^3 + 3x^2 \\
 \underline{-1x^4 - 1x^3 + 3x^2} \\
 -8x^4 - 4x^3 - 2x
 \end{array}$$

$$\textcircled{6} x^4 + x^3 - x^2 \left(\frac{-8x^4 - 4x^3 - 2x}{x^2 - x + 3} \right)$$

$$\textcircled{7} (2x^4 - 2x^3 + 3x^2 + 5x + 10) : (x+2)$$

$$\begin{array}{r}
 x^3 + x \\
 \hline
 x+2 \overline{) 2x^4 - 2x^3 + 3x^2 + 5x + 10} \\
 \underline{- 2x^4 - 2x^3} \\
 3x^2 + 5x + 10 \\
 \underline{+ 3x^2 + 5x + 10} \\
 1x^2 - 2x + 2x \\
 + 12x
 \end{array}$$

$$x^3 + x \left(\frac{+12x}{x+2} \right)$$

$$\textcircled{8} (x^{10} - 1024) : (x+2)$$

$$\begin{array}{r}
 x^9 - 512x \\
 \hline
 x+2 \overline{) x^{10} - 1024} \\
 \underline{- x^{10} + 2x^9} \\
 - 1024 \\
 \underline{+ 1024} \\
 0
 \end{array}$$

$$x + 2 \overline{) \begin{array}{r} x^{10} - 1024 \\ -x^{10} \\ \hline \end{array}}$$

$$(9) (x^3 - 5x - 1)(x - 3)$$

$$\begin{array}{r} x^2 + x \\ x - 3 \overline{) \begin{array}{r} x^3 + 0x^2 - 5x - 1 \\ -x^3 + 3x^2 \\ \hline 3x^2 + 5x - 1 \\ 1x^2 + 3x \\ \hline 2x^2 + 8x - 1 \end{array}} \end{array}$$

$$R = x^2 + x \left(\frac{2x^2 + 8x}{x - 3} \right)$$

$$(10) (R^4 S^3 T^2 U)^5 = (R^{20} S^{15} T^{10} U^5)$$

$$(11) (-A^3 B^4 C^2 D^5)^6 = (-A^{18} B^{24} C^{12} D^{35})$$

$$(12) (-3x^6 y^3 z^2) \div (-3x^6 y^3 z^2)$$

$$\frac{-3x^6 y^3 z^2}{-3x^6 y^3 z^2} = R = 1$$

$$13 \left(\frac{2}{5} A^2 B - \frac{4}{3} AB - 4 \right) \left(\frac{3}{2} AB^2 \right)$$

$$\frac{\frac{2}{5} A^2 B}{\frac{3}{2} AB} - \frac{\frac{4}{3} AB}{\frac{3}{2} AB^2} - 4 = \frac{15}{4} A B^{-1} - \frac{2}{3} A B^{-1} - 4$$

$$(14) (3x^3 + 2y^2) (3x^3 + 2y^3)^2$$

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

$$9x^6 + 6x^3 y^3$$

$$+ 6x^3 y^3 + 4y^6$$

$$(9x^6 + 6x^3 y^3 + 4y^6) (3x^3 + 2y^2)$$

$$R = 27x^9 + 36x^6 y^2 + 18x^3 y^5 + 8y^8$$

$$15 \left(\frac{2}{6} A^3 + \frac{1}{3} B^2 \right) \left(\frac{2}{6} A^3 + \frac{1}{3} B^2 \right) =$$

$$\frac{2}{6} A^3 + \frac{1}{3} B^2 \quad \neq = \frac{4}{12} A^3 + \frac{2}{6} B^2$$