

$$(3A^3 + 5A^2 - 4) \div (3A)$$

$$\begin{array}{r} 3a+0 \overline{) 3a^3 + 5a^2 + 0a - 4} \\ \underline{-3a^3 - 0} \\ +5a^2 + 0a \\ \underline{-5a^2 - 0} \\ 0 - 4 \end{array}$$

$$r = a^2 + \frac{5}{3}a - \frac{4}{3a}$$

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

$$-\frac{1}{2}AB^2 \overline{) -\frac{2}{3}B^5 + \frac{5}{2}AB^4 - \frac{1}{4}A^2B^4 + \frac{2}{3}A^2B^2}$$

$$(x^4 - 2x^3 - 11x^2 + 30x - 20) \div (x^2 + 3x - 2)$$

$$\begin{array}{r} x^2 - 5x + 6 \\ x^4 + 3x^3 - 2x^2 - 11x^2 - 11x^2 + 30x - 20 \\ \underline{-x^4 - 3x^3 + 2x^2} \\ -5x^3 - 9x^2 + 30x - 20 \\ \underline{5x^3 + 15x^2 - 10x} \\ 6x^2 + 20x - 20 \\ \underline{-6x^2 - 18x + 12} \\ 2x - 8 \end{array}$$

$$R = x^2 - 5x + 6 + \frac{2x - 8}{x^2 + 3x - 2}$$

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

$$\begin{array}{r} x^4 + x^3 + 3x^2 - 6 \\ x^6 + 0x^5 + 5x^4 + 0x^3 + 3x^2 - 2x + 0 \\ \underline{-x^6} \\ x^5 + 2x^4 + 0x^3 + 3x^2 - 2x + 0 \\ \underline{x^5 - x^4 + 3x^3} \\ 3x^4 - 3x^3 + 3x^2 - 2x + 0 \\ \underline{3x^4 + 3x^3 - 9x^2} \\ -6x^2 - 2x + 0 \\ \underline{+6x^2 + 6x - 18} \\ -8x + 18 \end{array}$$

$$(x^4 - 2x^3 + 11x^2 + 30x - 20) \div (x^2 + 3x - 2)$$

$$\begin{array}{r} x^2 + 3x - 2 \overline{) x^4 - 2x^3 + 11x^2 + 30x - 20} \\ \underline{x^4 + 3x^3 - 2x^2} \\ -5x^3 + 9x^2 + 30x - 20 \\ \underline{5x^3 + 15x^2 - 10x} \\ 6x^2 + 20x - 20 \\ \underline{-6x^2 - 18x + 12} \\ 2x - 8 \end{array}$$

$$(2x^4 + 2x^3 + 3x^2 + 5x + 10) \div (x + 2)$$

$$\begin{array}{r} x + 2 \overline{) 2x^4 + 2x^3 + 3x^2 + 5x + 10} \\ \underline{2x^4 + 4x^3} \\ -2x^3 + 3x^2 + 5x + 10 \\ \underline{2x^3 + 4x^2} \\ -x^2 + 5x + 10 \\ \underline{-x^2 - 2x} \\ 7x + 10 \\ \underline{7x + 14} \\ -4 \end{array}$$

$$r = 2x^3 - 6x^2 + 15x - 25 + \frac{60}{x+2}$$

$$(x^{10} - 1024) \div (x + 2)$$

$$x^9 \cdot 2x^9 + 4x^7 - 1x^6 + 16x^5 - 32x^4 + 64x^3 - 128x^2 + 256x - 512$$

$$x+2 \overline{) x^{10} - 1024}$$

$$- x^{10} - 2x^9$$

$$\hline + 2x^9$$

$$+ 4x^8$$

$$\hline + 4x^8$$

$$- 4x^7 - 8x^7$$

$$\hline - 8x^7$$

$$+ 8x^6 + 16x^6$$

$$\hline + 16x^6$$

$$- 16x^5 - 32x^5$$

$$\hline - 32x^5$$

$$- 32x^4 + 64x^4$$

$$\hline + 64x^4$$

$$- 64x^3 - 128x^3$$

$$\hline - 128x^3$$

$$+ 128x^2 + 256x^2$$

$$\hline + 256x^2$$

$$- 256x - 512$$

$$\hline - 512$$

$$\hline 512x$$

$$(x^3 - 5x - 1) \div (x - 3)$$

$$x^2 + 3x + 4$$

$$x - 3 \overline{) x^3 + 0x^2 - 5x - 1}$$

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

$$3x^2 - 5x - 1$$

$$\underline{-3x^2 + 9x}$$

$$4x - 1$$

$$\underline{-4x + 12}$$

$$11$$

$$(-3x^6y^3z^2)(-3x^6y^3z^2)$$

$$\begin{array}{r} +9x^{12} - 3x^6y^3 - 3x^6z^2 \\ - 3x^6y^3 \quad + y^6 + y^3z^2 \\ - 3x^6z^2 \quad + y^3z^2 + z^4 \\ \hline +9x^{12} - 3x^6y^3 - 3x^6z^2 + y^6 + y^3z^2 + z^4 \end{array}$$

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

$$\frac{6}{10}A^3B^3 - \frac{12}{6}A^2B^4 + \frac{12}{8}AB^2$$

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

$$\begin{array}{r} 9x^6 + 6x^3y^3 \\ + 6x^3y^2 + 4y^5 \end{array}$$

$$(9x^6 + 6x^3y^3 + 6x^3y^2 + 4y^5)(3x^3 + 2y^3)$$

$$\begin{array}{r} 27x^9 + 18x^6y^3 + 18x^6y^2 + 12x^3y^5 \\ + 18x^6y^3 \quad 12x^3y^5 + 12x^3y^6 + 8y^8 \end{array}$$

$$27x^9 + 18x^6y^3 + 18x^6y^2 + 12x^3y^5 + 12x^3y^6 + 8y^8$$

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

$$\frac{4}{36} A^6 + \frac{2}{18} A^3 B^2$$

$$\frac{2}{18} A^3 B^2 + \frac{1}{9} B^4$$

$$\frac{4}{36} A^6 + 2\frac{2}{18} A^3 B^2 + \frac{1}{9} B^4$$