

$$23. \frac{12x^4 - 20x^3 + \overset{+0x^2}{9x} + 35}{3x - 5} \div 3$$

$$\frac{4x^4 - \frac{20}{3}x^3 + 0x^2 + 3x + \frac{35}{3}}{x - \frac{5}{3}}$$

$$\begin{array}{r|rrrrr} \frac{5}{3} & 4 & -\frac{20}{3} & 0 & 3 & \frac{35}{3} \\ & \downarrow & \frac{20}{3} & 0 & 0 & \frac{15}{3} \\ \hline & 4 & 0 & 0 & 3 & \frac{50}{3} \\ & & & & & + \frac{50}{3} \times 1 \\ & & & & & + \frac{50}{3} \times 3 \end{array}$$

$$4x^3 + 3 + \frac{50}{3x-5}$$

$$21. \frac{(3x^4 + 4x^3 - 32x^2 - 5x - 20)}{x+4} \div \cancel{x+4}^4$$

$$\begin{array}{r|rrrrr} -4 & 3 & 4 & -32 & -5 & -20 \\ & \downarrow & -12 & 32 & 0 & 20 \\ \hline & 3 & -8 & 0 & -5 & 0 \end{array}$$

$$3x^3 - 8x^2 - 5$$

$$4. \left(\frac{4x^{-3}y^2}{xy^{-5}} \right)^{-2} = \frac{4^{-2}x^6y^{-4}}{x^{-2}y^{10}} = 4^{-2}x^8y^{-14}$$

$$= \frac{x^8}{4^2 y^{14}}$$

$$= \frac{x^8}{16y^{14}}$$

$$22. (8x^4 - 4x^2 + x + 4) \div (2x + 1)$$

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

$$\begin{array}{l} \frac{8x^4}{2x} = 4x^3 \\ \frac{-4x^3}{2x} = -2x^2 \\ \frac{-2x^2}{2x} = -x \\ \frac{2x}{2x} = 1 \end{array}$$

$$(5b) (2xy^3)(-3x^{-1}y^{-3})$$

$$3^{-2}x = \frac{x}{9}$$

$$11. (w-4) - (6+3w^2-4u)$$

$$w-4-6-3w^2+4u$$

$$w-10-3w^2+4u$$

(20)

$$m^2 - 7$$

$$m+3 \overline{) m^3 + 3m^2 - 7m - 21}$$

$$(-) \underline{m^3 + 3m^2}$$

$$\cancel{m^2} - 7m - 21$$

$$(-) \underline{-7m - 21}$$

0

$$\frac{m^3}{m} = m^2$$

$$\frac{-7m}{m} = -7$$