

Ex 8.4:

1) $(3y)(4y^2)$

$$\begin{aligned} & 12y^{1+2} = y^3 \\ & 12y^3 \end{aligned}$$

2) $(6ab)(-2a^2b^3)$

$$12a^{1+2} = a^3$$

$$b^{1+3} = b^4$$

$$-12a^3b^4$$

4) $(7xy)(9x^2yz^2)$

$$63x^{1+2}y^{1+1}z^2$$

$$63x^3y^2z^2$$

6) $(5ab)(6a^2cd^2)$

$$30a^{1+2}b^{1+0}c^{1+0}d^{2+0}$$

$$30a^3bcd^2$$

8) $(\frac{3}{4}xy^2)(8x^2)$

$$6x^{1+2}y^2$$

$$6x^3y^2$$

10) $(5ab)(-2bc)(-3ac^2)$

$$30a^{1+1+1}b^{1+1}c^{1+1+2}$$

$$30a^3b^2c^3$$

$$12) (by^k)(-5y^{2-k})(-2y) \\ 30y^{k-k+2-k+1} = y^3 \\ 30y^3$$

$$14) a(a+2b+3c) \\ a(a) + a(2b) + a(3c) \\ a^2 + 2ab + 3ac$$

$$16) (3ab)(a^5+ab^2-b^3) \\ 3ab(a^5) + 3ab(ab^2) - (3ab)(b^3) \\ 3a^6b + 3a^2b^3 - 3ab^4$$

$$18) -x(x^5-x^3+x) \\ -x(x^5) - x(-x^3) - x(x) \\ -x^6 + x^4 - x^2$$

$$20) 2ab(3ax-4by+5cz) \\ 2ab(3ax) + 2ab(-4by) + 2ab(5cz) \\ 6a^2x - 8ab^2y + 10abcz$$

$$22) 3.5ab^2(2ab-4a+8) \\ 3.5ab^2(2ab) + 3.5ab^2(-4a) + 3.5ab^2(8) \\ 7a^2b^3 - 14a^2b^2 + 28ab^2$$

$$24) y^{2n}(by^n + 5y^{1-n} - 2y) \\ y^{2n}(by^n) + y^{2n}(5y^{1-n}) + y^{2n}(-2y) \\ 3y^{3n+1} + 5y^{n+1} - 2y^{2n+1}$$

$$26) (y-3)(y-2)$$

$$y^2 - 2y - 3y + 6$$

$$y^2 - 5y + 6$$

$$28) (x-3)(x+1)$$

$$x^2 + x - 3x - 3$$

$$x^2 - 2x - 3$$

$$30) (5x+2)(bx-5)$$

$$10x^2 - 25x + 4x - 10$$

$$10x^2 - 21x - 10$$

$$32) (3x+4)(3x+4)$$

$$9x + 12x + 12x + 16$$

$$9x + 24x + 16$$

$$34) (x+1)(x^2 + 3x + 4)$$

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

$$x^3 + 4x^2 + 7x + 4$$

$$36) (3a-2)(a^3 - a^2 + a - 1)$$

$$3a^4 - 3a^3 + 3a^2 - 3a - 2a^3 + 2a^2 - 2a + 2$$

$$- 5a^3 + 5a^2 - 5a + 2$$

$$38) (a+b)(p-q+r)$$

$$ap - aq + ar + bp - bq + br$$

$$40) (a^2 + b^2)(a^2 - b^2)$$

$$(a^2)^2 - (b^2)^2$$

$$a^4 - b^4$$

$$42) (y+1)(y^4 - 2y^3 + y^2)$$

$$y(y^4 - 2y^3 + y^2)$$

$$y^5 - 2y^4 + y^3 + y^4 - 2y^3 + y^2$$

$$y^5 - y^4 + y^3 - y^2 + y^2$$

$$44) (2.5x + 0.5)(4x^2 - 8x + 10)$$

$$- 2.5x(4x^2 - 8x + 10) + 0.5(4x^2 - 8x + 10)$$

$$- 10x^3 + 20x^2 + 50x + 2x^2 - 4x + 10$$

$$- 10x^3 + 22x^2 + 46x + 10$$

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$$1) \frac{8x^9}{4x^3} =$$

$$8 \div 4 = 2$$

$$2 \times 9-3 = 6$$

$$2x^6$$

$$2) \frac{9y^4}{3y^0} =$$

$$3y^4$$

$$4) \frac{3a^2bc^3}{-a^2bc} =$$

$$-3c^2$$

$$6) \frac{40x^{13}y^6}{8x^9y^3} =$$

$$5x^4y^3$$

$$8) \frac{-10rst^2s^4s}{-22rst^2s^3} =$$

11rst

$$10) \frac{6a^2b^k}{-5ab^{k-1}}$$

$$-3ab^{k-1}$$

$$12) \frac{-51x^ky^{2k}}{-18x^{k-1}y^{k-3}}$$

$$\frac{17y^{k+3}}{y^{k-2}}$$

$$14) \frac{8a^5-4a^7}{2a^3}$$

$$\frac{4a^{12}}{2a^6} = 2a^6$$

$$16) \frac{x^3+3x^2-8x}{x}$$

$$\frac{x^3}{x} + \frac{3x^2}{x} - \frac{8x}{x}$$

$$x^2+3x-8$$

$$18) \frac{x^2yz^2 - xyz^2 + x^2yz^2}{xyz}$$

$$\frac{x^2yz^2}{xyz} - \frac{xyz^2}{xyz} + \frac{x^2yz^2}{xyz}$$

$$xz + z - yz + xz$$

$$20) \frac{2x^4 + 9x^2 - 5x}{0.5x}$$

$$\frac{2x^4}{0.5x} + \frac{9x^2}{0.5x} - \frac{5x}{0.5x}$$

$$4x^3 + 18x - 10$$

$$22) \frac{y^{k+1} - 6y^{2-k} - y^4}{y^k}$$

$$\frac{y^{k+1}}{y^k} - \frac{6y^{2-k}}{y^k} - \frac{y^4}{y^k}$$

$$y^{k+1-k} - 6y^{2-k-k} - y^{4-k}$$

$$24) (x^3 + 2x - 35) \div (x + 7)$$

$$\frac{x^3 + 2x - 35}{x + 7}$$

$$\frac{(x + 7)(x - 5)}{x + 7} =$$

$$x - 5$$

$$24) y^2 + 9y + 13 \div (y + 2)$$

$$y + 7 + \frac{-11}{y+2}$$

$$28) (5x^2 - 13x + 6) \div (5x + 2)$$

$$\underline{5x^2 - 13x + 6}$$

$$5x - 13$$

$$\underline{(5x + 2)(x - 2)} = x - 2$$

$$5x - 13$$

$$30) (36x^2 - 49) \div (6x + 7)$$

$$\underline{36x^2 - 49}$$

$$6x + 7$$

$$\underline{(6x + 7)(6x - 7)}$$

$$6x + 7$$

$$6x - 7$$

$$32) (x^5 + 1) \div (x - 1) \quad \frac{x^5 + 1}{x - 1}$$

$$x^4 - x^3 + x^2 - x + 1$$

$$x^4$$

$$34) (n^5 - 5n^3) \div (n+3)$$

$$n^5 + 5n^3 = \frac{n+3(n^4 - 3n^3 + 9n^2 - 27n + 81)}{n+3}$$

$$n^4 - 3n^3 + 9n^2 - 27n + 81$$