



Sect ChP (Review) 8.61 * 4-96 (4's)

4. $(A+1)(x+y) = (A+1)x + (A+1)y$ distributive prop.

8. $(-2, \infty) \quad x > -2$



12. $0 \leq x \leq \frac{1}{2} \quad [0, \frac{1}{2}]$



16. $\sqrt[3]{-125} = -5$ 20. $\sqrt[4]{4} \sqrt[4]{324} = \sqrt[4]{1296} = 6 = 16$

24. $x\sqrt{x} = x^1 \cdot x^{\frac{1}{2}} = x^{\frac{3}{2}}$ 28. $((x^a)^b)^c = x^{abc}$

32. $(a^2)^{-3} (a^3 b)^2 (b^3)^4$ 36. $\sqrt{x^2 y^4}$

$$a^{-6} \cdot a^6 \cdot b^2 \cdot b^{12}$$

$$b^{14}$$

$$|x|y^2$$

40. $\left(\frac{ab^2 c^{-3}}{2a^3 b^{-4}}\right)^{-2} = \frac{a^{-2} b^{-4} c^6}{2^{-2} a^{-6} b^8} = \frac{4a^4 c^6}{b^{12}}$

44. $80/\text{min} \quad 90 \text{ yrs}$ beats 80 · min 60 · hrs 24 · days 365 · yrs 90

$$3,784,320,000$$

$$3.8 \times 10^9$$

if 365.25 days/yr

$$3,786,912,000$$

48. $x^2 + 3x - 10$ 52. $x^4 - 2x^2 + 1$ 56. $y^3 - 2y^2 - y + 2$

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

$$(x^2-1)^2$$

$$y^2(y-2) - 1(y-2)$$

60. $8x^3 + y^6$ $(x^2-1)(x^2-1)$ $(y^2-1)(y-2)$

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

$$(x+1)(x-1)(x+1)(x-1)$$

$$(y+1)(y-1)(y-2)$$

$$(x+1)^2(x-1)^2$$

$(2x+y^2)(4x^2-2xy^2+y^4)$

$$64. \quad ax^2 + bx^2 - a - b$$

$$x^2(a+b) - 1(a+b)$$

$$(x^2 - 1)(a+b)$$

$$(x+1)(x-1)(a+b)$$

$$68. \quad (2y-7)(2y+7)$$

$$4y^2 - 49$$

$$76. \quad \frac{x^3 + 2x^2 + 3x}{x} = x^2 + 2x + 3$$

$$72. \quad (2x+1)^3$$

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

$$8x^3 + 8x^2 + 2x + 4x^2 + 4x + 1$$

$$8x^3 + 12x^2 + 6x + 1$$

$$80. \quad \frac{\frac{x^3}{x-1}}{\frac{x^2}{x^2-1}} = \frac{x^3}{x-1} \cdot \frac{(x^3-1)}{x^2} = \frac{x \cdot x^2}{\cancel{(x-1)}} \cdot \frac{\cancel{(x-1)}(x^2+x+1)}{x^2} = x(x^2+x+1)$$

$$84. \quad \frac{2}{x} + \frac{1}{x-2} + \frac{3}{(x-2)^2} = \frac{2x^2 - 8x + 8 + x^2 - 2x + 3x}{(x)(x-2)(x-2)} = \frac{3x^2 - 7x + 8}{x(x-2)^2}$$

$x^2 - 4x + 4$
 $x^2 - 2x$

$$\begin{array}{r|rrrr} 3 & 8 & 1 & 4 & 2 \\ & 1 & 8 & 2 & 4 \end{array}$$

$$88. \quad \frac{\frac{1}{x} - \frac{1}{x+1}}{\frac{1}{x} + \frac{1}{x+1}} = \left[\frac{\frac{1}{x} - \frac{1}{x+1}}{\frac{1}{x} + \frac{1}{x+1}} \right] \frac{x(x+1)}{x(x+1)} = \frac{x+1-x}{x+1+x} = \frac{1}{2x+1}$$

$$92. \quad \frac{1+\sqrt{a}}{1-a} = \frac{1}{1-\sqrt{a}}$$

$$1(1-a) = (1+\sqrt{a})(1-\sqrt{a})$$

$$1-a = 1-a$$

yes

cross-mult.

$$96. \quad \frac{1}{x+4} = \frac{1}{x} + \frac{1}{4}$$

$$\frac{1}{x+4} = \frac{4+x}{4x}$$

No