

Alg 2 Ch 7 Sec 7.5 + Review

$$\textcircled{1} \begin{array}{r} 3\sqrt{x}+3=15 \\ -3 \quad -3 \\ \hline 3\sqrt{x}=12 \\ \hline \sqrt{x}=4 \\ (\quad)^2 (\quad)^2 \\ \hline x=16 \end{array}$$

$$\textcircled{2} \begin{array}{r} 4\sqrt{x}-1=3 \\ +1 \quad +1 \\ \hline 4\sqrt{x}=4 \\ \hline \sqrt{x}=1 \\ (\quad)^2 (\quad)^2 \\ \hline x=1 \end{array}$$

$$\textcircled{3} \begin{array}{r} \sqrt{x+3}=5 \\ (\quad)^2 (\quad)^2 \\ \hline x+3=25 \\ -3 \quad -3 \\ \hline x=22 \end{array}$$

$$\textcircled{4} \begin{array}{r} \sqrt{3x+4}=4 \\ (\quad)^2 (\quad)^2 \\ \hline 3x+4=16 \\ -4 \quad -4 \\ \hline 3x=12 \\ \hline x=4 \end{array}$$

$$\textcircled{5} \begin{array}{r} \sqrt{2x+3}-7=0 \\ +7 \quad +7 \\ \hline \sqrt{2x+3}=7 \\ (\quad)^2 (\quad)^2 \\ \hline 2x+3=49 \\ -3 \quad -3 \\ \hline 2x=46 \\ \hline x=23 \end{array}$$

$$\textcircled{6} \begin{array}{r} \sqrt{6-3x}-2=0 \\ +2 \quad +2 \\ \hline \sqrt{6-3x}=2 \\ (\quad)^2 (\quad)^2 \\ \hline 6-3x=4 \\ -6 \quad -6 \\ \hline -3x=-2 \\ \hline x=2/3 \end{array}$$

$$\textcircled{7} (125)^{-2/3} = \frac{1}{(125)^{2/3}} = \frac{1}{(\sqrt[3]{125})^2}$$

125
5 25
5 5 → $\frac{1}{5^2} = \frac{1}{25}$

$$\textcircled{8} x^{1/6} \cdot x^{1/3} = x^{1/6} \cdot x^{2/6} = x^{3/6} = x^{1/2} = \sqrt{x}$$

$$\textcircled{9} \left(\frac{8x^9y^3}{27x^2y^{12}} \right)^{2/3} = \frac{8^{2/3} x^{18/3} y^{6/3}}{27^{2/3} x^{4/3} y^{24/3}} = \frac{3\sqrt[3]{8^2} x^{14/3} y^{-18/3}}{3\sqrt[3]{27^2}} = \frac{2^2 \sqrt[3]{x^{14}} y^{-6}}{3^2} = \frac{4x^4 \sqrt[3]{x^2}}{9y^6}$$

$$\textcircled{10} (-32^1 x^{-10} y^{15})^{1/5} = (-32)^{1/5} x^{-10/5} y^{15/5} = \sqrt[5]{-32} x^{-2} y^3 = \frac{-2y^3}{x^2}$$

$$\textcircled{11} \frac{6x+1}{x+3} + \frac{5x}{2x} = \frac{2x(6x+1)}{2x(x+3)} + \frac{5x(x+3)}{2x(x+3)} = \frac{12x^2+2x+5x^2+15x}{2x(x+3)} = \frac{27x^2+17x}{2x(x+3)} = \frac{x(27x+17)}{2x(x+3)} = \frac{27x+17}{2(x+3)}$$

$$\textcircled{12} \frac{x+6}{x^2+9x+18} = \frac{x+6}{(x+6)(x+3)} = \frac{1}{x+3}$$

$$\textcircled{13} \frac{x^2+6x-16}{x^2+x-6} = \frac{(x+8)(x-2)}{(x+3)(x-2)} = \frac{x+8}{x+3}$$

$$\textcircled{14} \frac{8}{x^2-25} - \frac{9}{x-5} = \frac{8}{(x-5)(x+5)} - \frac{9}{x-5} = \frac{8}{(x-5)(x+5)} - \frac{9(x+5)}{(x-5)(x+5)}$$

$\frac{-9x-37}{(x-5)(x+5)} \leftarrow \frac{8-9x-45}{(x-5)(x+5)} \leftarrow \frac{8-9(x+5)}{(x-5)(x+5)} \leftarrow$