

HW: Worksheet/1-43 odd

Warm up:

Solve.

$$1) (\sqrt{x})^2 = (9)^2 \quad x = 81$$

$$2) (\sqrt{6x})^2 = \left(\frac{4}{7}\right)^2$$

$$\frac{6x}{6} = \frac{16}{49}$$

$$x = \frac{16}{49} \cdot \frac{1}{6} = \frac{8}{147}$$

$$3) \sqrt{x^2} = \sqrt{25}$$

$$x = \pm 5$$

$$\sqrt{11x^2 - 63} - 2x = 0$$

$$+2x \quad +2x$$

$$(\sqrt{11x^2 - 63})^2 = (2x)^2$$

$$11x^2 - 63 = 4x^2$$

$$-4x^2 \quad -4x^2$$

$$7x^2 - 63 = 0$$

$$+63 \quad +63$$

$$\frac{7x^2}{7} = \frac{63}{7}$$

$$\sqrt{x^2} = \sqrt{9}$$

$$x = \pm 3$$

$$\begin{array}{l} (3\sqrt{x})^2 = (4\sqrt{6})^2 \\ \frac{9x}{9} = \frac{96}{9} \\ x = \frac{32}{3} \end{array} \quad \left| \quad \begin{array}{l} \frac{3\sqrt{x}}{3} = \frac{4\sqrt{6}}{3} \\ (\sqrt{x})^2 = \left(\frac{4\sqrt{6}}{3}\right)^2 \\ x = \frac{96}{9} = \frac{32}{3} \end{array}$$

$$\left(\sqrt{x^2 - 24x}\right)^2 = (5)^2$$

$$x^2 - 24x = 25$$

$$\begin{array}{r} -25 \\ -25 \end{array}$$

$$x^2 - 24x - 25 = 0$$

$$(x - 25)(x + 1) = 0$$

$$x = 25, -1$$

$$\begin{array}{r} x - 25 = 0 \\ \hline x = 25 \\ x + 1 = 0 \\ \hline x = -1 \end{array}$$

HW Solutions

$$\textcircled{2} \quad \frac{1}{(\sqrt{7}-3)} \cdot \frac{(\sqrt{7}+3)}{(\sqrt{7}+3)} = \frac{\sqrt{7}+3}{7-9}$$
$$\frac{\sqrt{7}+3 \cdot (-1)}{-2 \cdot (-1)} = \frac{-\sqrt{7}-3}{2}$$

$$\textcircled{34} \quad \frac{(6-2\sqrt{3})(3\sqrt{2}-3)}{(3\sqrt{2}+3)(3\sqrt{2}-3)} =$$

$$\frac{18\sqrt{2}-18-6\sqrt{6}+6\sqrt{3}}{18-9}$$

$$\frac{18\sqrt{2}-18-6\sqrt{6}+6\sqrt{3}}{9} \div 3 = \frac{6\sqrt{2}-6-2\sqrt{6}+2\sqrt{3}}{3}$$

$$\textcircled{18} (6\sqrt{2} + 4)(3\sqrt{2} - 5)$$

$$36 - 30\sqrt{2} + 12\sqrt{2} - 20$$

$$\textcircled{16 - 18\sqrt{2}}$$

$$\textcircled{14} (3\sqrt{5} - \sqrt{2})(3\sqrt{5} + \sqrt{2})$$

$$45 - 2$$

$$\textcircled{43}$$

$$\textcircled{16} (8\sqrt{11} + 2\sqrt{6})(8\sqrt{11} - 2\sqrt{6})$$

$$704 - 24$$

$$\textcircled{680}$$

$$20 (7\sqrt{13} + 2\sqrt{6})(2\sqrt{13} + 3\sqrt{6})$$

$$182 + 21\sqrt{78} + 4\sqrt{78} + 36$$

$$218 + 25\sqrt{78}$$

$$\textcircled{30} \frac{(\sqrt{5} - 2) \cdot (\sqrt{3} - 1)}{(\sqrt{3} + 1) \cdot (\sqrt{3} - 1)}$$

$$\frac{\sqrt{15} - \sqrt{5} - 2\sqrt{3} + 2}{3 - 1}$$

$$3 - 1$$

$$\frac{\sqrt{15} - \sqrt{5} - 2\sqrt{3} + 2}{2}$$

$$\textcircled{1} (\sqrt{15} - \sqrt{3})(\sqrt{15} + \sqrt{3})$$

$$15 - 3$$

$$\textcircled{12}$$

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$$\textcircled{22} \frac{6}{5}$$

$$\textcircled{36} \pm \sqrt{19}$$

$$\textcircled{26} \frac{432}{7}$$

$$\textcircled{42} \sqrt{11}$$

$$\sqrt{136^2 \cdot 33} = 46$$

$$\textcircled{32} \frac{125}{18}$$

$$\textcircled{44} 1, -4$$

$$\textcircled{44} (\sqrt{a^2 + 3a})^2 = (2)^2$$

$$a^2 + 3a = 4$$

$$\begin{array}{r} -4 \quad -4 \\ \hline \end{array}$$

$$\frac{a^2 + 3a - 4 = 0}{(a + 4)(a - 1) = 0}$$

$$(a + 4)(a - 1) = 0$$

$$\textcircled{a = -4, 1}$$

$$Q2 \quad \sqrt{5m-5} - \frac{+6}{-6} = -6$$

$$\sqrt{5m-5} = -1$$

$$5m - 5 = 1$$

$$+5 \quad +5$$

$$5m = 6$$

$$\frac{5m}{5} = \frac{6}{5}$$

$$m = \frac{6}{5}$$

(34)

$$\frac{36}{4} = \frac{4\sqrt{4m^2+5}}{4}$$

$$(9)^2 = (\sqrt{4m^2+5})^2$$

$$\begin{array}{r} 81 = 4m^2 + 5 \\ -5 \qquad -5 \end{array}$$

$$\frac{76}{4} = \frac{4m^2}{4}$$

$$\sqrt{19} = \sqrt{m^2}$$

$$m = \pm\sqrt{19}$$

$$\textcircled{42} \left(\sqrt{136^2 + 33} \right)^2 = (46)^2$$

$$\begin{array}{r} 136^2 + 33 = 146^2 \\ -136 \qquad \qquad -136^2 \end{array}$$

$$\frac{33}{3} = \frac{36^2}{3}$$

$$\sqrt{11} = \sqrt{6^2}$$

$$\sqrt{11} = 6$$

