

HW: Adding and Subtracting Radicals/1-27 odd, 31

Warm up: $3x - 5x = x(3 - 5)$

Simplify.

1) $2(x - 5) + x - 2$

$$2x - 10 + x - 2 = 3x - 12$$

2) $-3 - (6 - x) - 3x + 1$

$$-3 - 6 + x - 3x + 1 = -8 - 2x$$

3) $3x + 3y - 5x - 7y + z$

$$-2x - 4y + z$$

$$2\sqrt{3} + 5\sqrt{3}$$

$$7\sqrt{3}$$

$$\begin{array}{r} 2x + 5x \\ 7x \end{array}$$

$$5\sqrt{7} - 8\sqrt{7}$$

$$-3\sqrt{7}$$

$$\sqrt{24} + \sqrt{6}$$

$$2\sqrt{6} + \sqrt{6}$$

$$3\sqrt{6}$$

$$\begin{aligned} & -6\sqrt{24} - 6\sqrt{6} \\ & -12\sqrt{6} - 6\sqrt{6} \\ & \quad -18\sqrt{6} \end{aligned}$$

$$3\sqrt{8} + 9\sqrt{12}$$

$$6\sqrt{2} + 18\sqrt{3}$$

$$4\sqrt{112} + 5\sqrt{56} - 9\sqrt{126}$$

16.7 4.14 9.14

$$16\sqrt{7} + 10\sqrt{14} - 27\sqrt{14}$$

$$16\sqrt{7} - 17\sqrt{14}$$

$$\sqrt{3} - \sqrt{\frac{1}{3}}$$

$$\sqrt{3} - \frac{\sqrt{1}}{\sqrt{3}}$$

$$\sqrt{3} - \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{\sqrt{3}}{1} - \frac{\sqrt{3}}{3}$$

$$\frac{3\sqrt{3}}{3} - \frac{\sqrt{3}}{3}$$

$$\frac{3\sqrt{3} - \sqrt{3}}{3} = \frac{2\sqrt{3}}{3}$$

$$\sqrt{\frac{2}{7}} - \sqrt{\frac{7}{2}}$$

$$\frac{\sqrt{2} \cdot \sqrt{7}}{\sqrt{7} \cdot \sqrt{7}} - \frac{\sqrt{7} \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$$

$$\frac{\sqrt{14}}{7} - \frac{\sqrt{14}}{2}$$

$$\frac{2\sqrt{14}}{14} - \frac{7\sqrt{14}}{14} = \frac{-5\sqrt{14}}{14} = \left(-\frac{5\sqrt{14}}{14}\right)$$

HW Solutions

$$(2) (3\sqrt{2})(-2\sqrt{8})(3\sqrt{27})$$

$$(3\sqrt{2})(-4\sqrt{2})(9\sqrt{3})$$

$$-108\sqrt{12}$$

$$-216\sqrt{3}$$

$$(3\sqrt{2})(-2\sqrt{8})(9\sqrt{3})$$

$$-54\sqrt{48}$$



$$(15) \sqrt{\frac{8}{11}} \cdot \sqrt{\frac{22}{32}}$$

$$\sqrt{\frac{\cancel{8}}{11} \cdot \frac{\cancel{22}}{\cancel{32}}}$$

$$\sqrt{\frac{1}{2}} = \frac{\sqrt{1}}{\sqrt{2}} = \frac{1 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$$

$$= \frac{\sqrt{2}}{2}$$

$$\text{4) } \sqrt{\frac{3}{4}} \cdot \sqrt{\frac{8}{9}}$$

$$\sqrt{\frac{\cancel{3}}{4}} \cdot \sqrt{\frac{\cancel{8}^2}{9}} = \sqrt{\frac{2}{3}} = \frac{\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{6}}{3}$$

$$\textcircled{2} \sqrt{3} \cdot \sqrt{3} \cdot \sqrt{4}$$

$$\sqrt{36} = \textcircled{6}$$

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$$\textcircled{10} \quad -3\sqrt{2} + 6\sqrt{52} - 7\sqrt{128}$$
$$- 9\sqrt{8} + 12\sqrt{13} - 14\sqrt{32}$$
$$\underline{-18\sqrt{2} + 12\sqrt{13} - 56\sqrt{2}}$$

$$\textcircled{-74\sqrt{2} + 12\sqrt{13}}$$

$$\text{Q4} \quad 5\sqrt{\frac{14}{3}} - \sqrt{\frac{9}{2}}$$

$$\frac{5\sqrt{14}}{\sqrt{3}} - \frac{\sqrt{9}}{\sqrt{2}}$$

$$\frac{20 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} - \frac{3 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$$

$$\frac{20\sqrt{3}}{3} - \frac{3\sqrt{2}}{2}$$

$$\frac{40\sqrt{3}}{6} - \frac{9\sqrt{2}}{6} = \frac{40\sqrt{3} - 9\sqrt{2}}{6}$$

