

Alg 2: Homework 28

$$\begin{aligned} \textcircled{1} \quad & \sqrt{63} - \sqrt{28} \\ &= \sqrt{9\sqrt{7}} - \sqrt{4\sqrt{7}} \\ &= 3\sqrt{7} - 2\sqrt{7} = 1\sqrt{7} = \boxed{\sqrt{7}} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \sqrt{160} - \sqrt{40} + \sqrt{90} \\ &= \sqrt{16\sqrt{10}} - \sqrt{4\sqrt{10}} + \sqrt{9\sqrt{10}} \\ &= 4\sqrt{10} - 2\sqrt{10} + 3\sqrt{10} = \boxed{5\sqrt{10}} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & 4\sqrt{27} - 6\sqrt{\frac{3}{4}} + 8\sqrt{48} \\ &= 4\sqrt{9\sqrt{3}} - 6\left(\frac{\sqrt{3}}{\sqrt{4}}\right) + 8\sqrt{16\sqrt{3}} \\ &= 4(3)\sqrt{3} - 6\left(\frac{\sqrt{3}}{2}\right) + 8(4)\sqrt{3} \\ &= 12\sqrt{3} - 3\sqrt{3} + 32\sqrt{3} = \boxed{41\sqrt{3}} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \frac{\sqrt{50} - \sqrt{8}}{4\sqrt{2}} \\ &= \frac{\sqrt{25\sqrt{2}} - \sqrt{4\sqrt{2}}}{4\sqrt{2}} \\ &= \frac{5\sqrt{2} - 2\sqrt{2}}{4\sqrt{2}} \end{aligned}$$

$$= \frac{3\sqrt{2}}{4\sqrt{2}} = \boxed{\frac{3}{4}}$$

$$\begin{aligned} \textcircled{5} \quad & (9 - \sqrt{2})(7 + \sqrt{2}) \\ &= 63 + 9\sqrt{2} - 7\sqrt{2} - 2 \\ &= \boxed{61 + 2\sqrt{2}} \end{aligned}$$

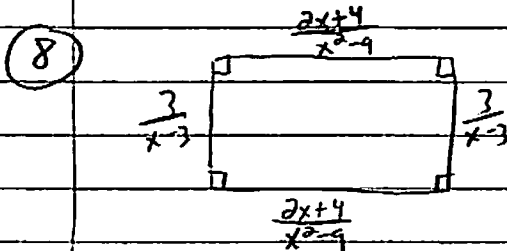
$$\textcircled{6} \quad \frac{1}{R_1} + \frac{1}{R_2} \quad [LCD = R_1 R_2]$$

$$\frac{(1) R_1 R_2}{\left(\frac{1}{R_1} + \frac{1}{R_2}\right) R_1 R_2} = \boxed{\begin{array}{c} R_1 R_2 \\ R_2 + R_1 \end{array}} \text{ choice (4)}$$

$$\textcircled{7} \quad \frac{3y^2 - 12y}{4y^2 - y^3}$$

$$= \frac{3y(y-4) \cancel{(-1)}}{y^2(4-y)}$$

$$= \boxed{\begin{array}{c} -3 \\ y \end{array}}$$



$$\text{Perimeter} = 2l + 2w$$

length width

$$P = 2\left(\frac{2x+4}{x^2-9}\right) + 2\left(\frac{3}{x-3}\right)$$

$$= \frac{2(2x+4)}{(x+3)(x-3)} + \left(\frac{6}{x-3}\right)\left(\frac{x+3}{x+3}\right)$$

$$= \frac{4x+8+6x+18}{(x+3)(x-3)}$$

$$= \boxed{\frac{10x+26}{(x+3)(x-3)}} \quad \text{or} \quad \boxed{\frac{2(5x+13)}{(x+3)(x-3)}}$$