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HW: Red text p. 541, 538, 539
Radicals

p. 541

$$\begin{aligned}
 15.) & \quad 5\sqrt{28} + 2\sqrt{7} - \sqrt{14} \\
 & \quad 5\sqrt{4 \cdot 7} + 2\sqrt{7} - \sqrt{14} \\
 & \quad 5 \cdot 2\sqrt{7} + 2\sqrt{7} - \sqrt{14} \\
 & \quad 10\sqrt{7} + 2\sqrt{7} - \sqrt{14} \\
 & \quad \boxed{12\sqrt{7} - \sqrt{14}}
 \end{aligned}$$

$$\begin{aligned}
 16.) & \quad -3\sqrt{72} + 6\sqrt{52} - 7\sqrt{128} \\
 & \quad -3\sqrt{36 \cdot 2} + 6\sqrt{4 \cdot 13} - 7\sqrt{64 \cdot 2} \\
 & \quad -3 \cdot 6\sqrt{2} + 6 \cdot 2\sqrt{13} - 7 \cdot 8\sqrt{2} \\
 & \quad -18\sqrt{2} + 12\sqrt{13} - 56\sqrt{2} \\
 & \quad \boxed{-74\sqrt{2} + 12\sqrt{13}}
 \end{aligned}$$

$$\begin{aligned}
 17.) & \quad -\sqrt{338} - \sqrt{200} + \sqrt{162} \\
 & \quad -\sqrt{169 \cdot 2} - \sqrt{100 \cdot 2} + \sqrt{81 \cdot 2} \\
 & \quad -13\sqrt{2} - 10\sqrt{2} + 9\sqrt{2} \\
 & \quad \boxed{-14\sqrt{2}}
 \end{aligned}$$

p. 538

$$\begin{aligned}
 5.) & \quad 2\sqrt{5} \cdot \sqrt{7} \\
 & \quad \boxed{2\sqrt{35}}
 \end{aligned}$$

$$\begin{aligned}
 17.) & \quad \sqrt{\frac{8}{4}} \cdot \sqrt{\frac{8^2}{4}} \\
 & \quad \sqrt{\frac{2}{1}} \cdot \sqrt{\frac{64}{1}}
 \end{aligned}$$

$$\begin{aligned}
 9.) & \quad \frac{\sqrt{11} \cdot \sqrt{44}}{\sqrt{484}} \\
 & \quad \boxed{2}
 \end{aligned}$$

$$\begin{aligned}
 & \quad \frac{\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{6}}{3} \\
 & \quad \boxed{\frac{\sqrt{6}}{3}}
 \end{aligned}$$

$$\begin{aligned}
 22.) & \quad \frac{\sqrt{155} \cdot \sqrt{1}}{11 \cdot \sqrt{1}} \\
 & \quad \frac{\sqrt{5} \cdot \sqrt{11}}{\sqrt{11} \cdot \sqrt{11}} \\
 & \quad \boxed{\frac{\sqrt{55}}{11}}
 \end{aligned}$$

$$\begin{aligned}
 18.) & \quad \sqrt{\frac{4}{5}} \cdot \sqrt{\frac{152}{36}} \\
 & \quad \frac{\sqrt{2}}{\sqrt{5}} = \frac{\sqrt{2}}{3} \\
 & \quad \boxed{\frac{\sqrt{2}}{3}}
 \end{aligned}$$

p. 539

31.) $(3\sqrt{2})(-2\sqrt{8})(3\sqrt{27})$

$(-6\sqrt{16})(3\sqrt{27})$

$-18\sqrt{432}$

$-18\sqrt{144 \cdot 3}$

$-18 \cdot 12\sqrt{3}$

$(-216\sqrt{3})$

* multiply 2 terms at a time

* last step is to simplify the radical

29) $\sqrt{5}(\sqrt{5}-2)$
 $(5-2\sqrt{5})$

use the distributive property

p. 538

19) $\sqrt{\frac{+3}{3 \times 5}} \cdot \sqrt{\frac{+1}{2 \times 2}}$

$\sqrt{\frac{+3}{5}} \cdot \sqrt{\frac{1}{2}}$

simplify

$\sqrt{9} = 3$