Simplify

$$\sqrt{6} \cdot \sqrt{8} \quad = \quad \sqrt{48}$$

$$\sqrt{3}\,2 \quad 2\,\sqrt{4}$$

$$\sqrt{4} \qquad 2$$

$$2$$

$$\boxed{4\sqrt{3}}$$

$$\sqrt{4}\ \sqrt{12}$$

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

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

$$\boxed{4\sqrt{3}}$$

$$\sqrt{16}\ \sqrt{3}$$

$$4\sqrt{3}$$

$$\sqrt{7} \cdot \sqrt{7} \ = \ \sqrt{49} \ => 7$$

$$\sqrt{9} \cdot \sqrt{9} \ = \ \sqrt{81} \ = 9$$

$$\sqrt{3} \cdot \sqrt{3} \ = \ \sqrt{9} \ = \ 3$$

$$\left(3\sqrt{5}\right)\left(3\sqrt{2}\right)$$

$$\boxed{15\sqrt{10}}$$

$$\left(3\sqrt{10}\right)\left(4\sqrt{2}\right)$$

$$12\sqrt{20}$$

$$12\ \sqrt{4}\ \sqrt{5}$$

$$12 \cdot 2\sqrt{5}$$

$$\boxed{24\sqrt{5}}$$

$$\left(3\sqrt{10}\right)\left(4\sqrt{2}\right)$$

$$3\sqrt{5}\ \sqrt{2} \qquad 4\sqrt{2}$$

$$\qquad\qquad \sqrt{4}$$

$$3 \cdot 4 \cdot 2\ \sqrt{5}$$

$$\boxed{24\sqrt{5}}$$

4 **Simplify.**

a. $(3\sqrt{5} - 2\sqrt{3})(2 + \sqrt{3})$

$6\sqrt{5} + 3\sqrt{15} - 4\sqrt{3} - 2\sqrt{9}$

$-2(3)$

$6\sqrt{5} + 3\sqrt{15} - 4\sqrt{3} - 6$

b. $(5\sqrt{3} - 6)(5\sqrt{3} + 6)$

$25\sqrt{9} + 30\sqrt{3} - 30\sqrt{3} - 36$
$25(3)$

$75 - 36$

39

conjugate

$x+2 \quad x-2$
$3x-12 \quad 3x+12$

rationalize the denominator

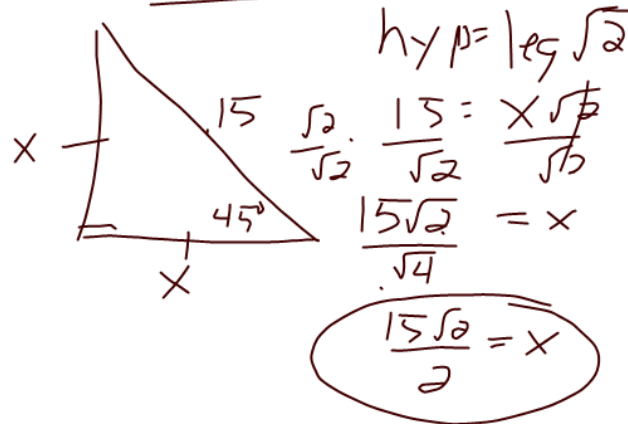$$\frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3}}{\sqrt{9}} = \frac{5\sqrt{3}}{3}$$

$$\sqrt{\frac{13}{2}} = \frac{\sqrt{13}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{26}}{\sqrt{4}} = \boxed{\frac{\sqrt{26}}{2}}$$

$$\sqrt{\frac{10}{2}} = \boxed{\sqrt{5}}$$

$$\frac{\sqrt{8}}{\sqrt{2}} = \sqrt{\frac{8}{2}} = \sqrt{4} = 2$$

$$\frac{\sqrt{8}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{16}}{\sqrt{4}} = \frac{4}{2} = 2$$

45-45-90

hyp = leg $\sqrt{2}$

$\frac{15}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$ $15 = x\sqrt{2}$

$\frac{15\sqrt{2}}{\sqrt{4}} = x$

$\boxed{\frac{15\sqrt{2}}{2} = x}$

⑤ Simplify $\dfrac{1-\sqrt{3}}{5+\sqrt{3}} \cdot \dfrac{5-\sqrt{3}}{5-\sqrt{3}}$

$$= \frac{5 - \sqrt{3} - 5\sqrt{3} + \overset{3}{\cancel{\sqrt{9}}}}{25 - \cancel{5\sqrt{3}} + \cancel{5\sqrt{3}} - \underset{-3}{\cancel{\sqrt{9}}}}$$

$$= \frac{8 - 6\sqrt{3}}{25 - 3} = \frac{8 - 6\sqrt{3} \div 2}{22 \div 2} = \boxed{\frac{4 - 3\sqrt{3}}{11}}$$

5B. $\dfrac{3 - 2\sqrt{5}}{6 + \sqrt{5}} \cdot \dfrac{6 - \sqrt{5}}{6 - \sqrt{5}}$

$$= \frac{18 - 3\sqrt{5} - 12\sqrt{5} \overset{+10(5)}{+2\cancel{\sqrt{25}}}}{36 - \cancel{6\sqrt{5}} + \cancel{6\sqrt{5}} \underset{-5}{- \cancel{\sqrt{25}}}}$$

$$= \boxed{\frac{28 - 15\sqrt{5}}{31}}$$

p. 413-414

18-19, 22-23, 34-36, 38-46, 49, 52-53, 55, 57, 60, 62-63, 72-79 (no calculator)