Rationalizing the Denominator

$$\frac{7}{3-\sqrt{7}}$$ ← denominator is a binomial so multiply by the conjugate

conjugate

$3-\sqrt{7} \rightarrow 3+\sqrt{7}$

Change the middle sign only!

$$\frac{7}{(3-\sqrt{7})} \cdot \frac{(3+\sqrt{7})}{(3+\sqrt{7})}$$

$$\frac{21+7\sqrt{7}}{9-7} = \frac{21+7\sqrt{7}}{2}$$

Rationalizing the Denominator

$$\frac{5}{\sqrt{6}+\sqrt{3}} \cdot \frac{\sqrt{6}-\sqrt{3}}{\sqrt{6}-\sqrt{3}}$$

$$\frac{5\sqrt{6}-5\sqrt{3}}{6-3}$$

$$\frac{5\sqrt{6}-5\sqrt{3}}{3}$$

Simplify

① $\sqrt{32}$

$\sqrt{16}\sqrt{2}$

$4\sqrt{2}$

② $\sqrt{75x^3}$

$\sqrt{25}\sqrt{3}\cdot\sqrt{x^2}\sqrt{x}$

$5\sqrt{3}\cdot x\sqrt{x}$

$5x\sqrt{3x}$

Product Property $\sqrt{ab} \Leftrightarrow \sqrt{a} \cdot \sqrt{b}$

(3) $\sqrt{9} \cdot \sqrt{9}$

$3 \cdot 3$

9

(4) $3\sqrt{g} \cdot \sqrt{2g^3}$

$3\sqrt{2g^4}$

$3\sqrt{2}\, g^2$

$3g^2\sqrt{2}$

(5) $2\sqrt{mn^2} \cdot \sqrt{5m^2}$

$2\sqrt{5m^3n^2}$

$2\sqrt{5}\sqrt{m^2}\sqrt{m}\sqrt{n^2}$

$2mn\sqrt{5m}$

Quotient Property - $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

(6) $\sqrt{\frac{5}{49}}$

$\frac{\sqrt{5}}{\sqrt{49}}$

$\frac{\sqrt{5}}{7}$

(7) $\sqrt{\frac{11}{d^4}}$

$\frac{\sqrt{11}}{\sqrt{d^4}}$

$\frac{\sqrt{11}}{d^2}$

Rationalize the denominator

⑧ $\frac{7}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}}$

$\frac{7\sqrt{6}}{6}$

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

$\frac{\sqrt{15a}}{5a}$

HOMEWORK

- **Worksheet – both sides**

  Evens Only!!