Rationalizing Denominators

① $\frac{8}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{8\sqrt{2}}{\sqrt{4}} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$

② $\frac{7}{\sqrt{5x}} \cdot \frac{\sqrt{5x}}{\sqrt{5x}} = \frac{\quad}{\sqrt{25x^2}} = \frac{7\sqrt{5x}}{5x}$

③ $\dfrac{6}{\sqrt[3]{9x^2}} \cdot \dfrac{\sqrt[3]{3x}}{\sqrt[3]{3x}} = \dfrac{}{\sqrt[3]{27x^3}} = \dfrac{6\sqrt[3]{3x}}{3x}$

$= \dfrac{2\sqrt[3]{3x}}{x}$

④ $(3-\sqrt{2})(3+\sqrt{2})$

$9-\sqrt{4}$

$9-2$

7

(5) $\dfrac{9}{(\sqrt{5}+2)} \cdot \dfrac{(\sqrt{5}-2)}{(\sqrt{5}-2)} = \dfrac{9\sqrt{5}-18}{\sqrt{25}-4} = \dfrac{9\sqrt{5}-18}{1}$

$9\sqrt{5}-18$

(6)

$$\frac{(8-\sqrt{7})(4-2\sqrt{7})}{(4+2\sqrt{7})(4-2\sqrt{7})} = \frac{32-16\sqrt{7}-4\sqrt{7}+2\sqrt{49}}{16-4\sqrt{49}}$$

$$16-4(7)$$

$$16-28$$

$$-12$$

$$\frac{32-20\sqrt{7}+14}{-12}$$

$$-12$$

$$\frac{46-20\sqrt{7}}{-12}$$

$$\frac{23-10\sqrt{7}}{-6}$$

Rationalizing the Denominator

(Get rid of radicals in bottom of fraction)

① $\frac{7}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{7\sqrt{2}}{\sqrt{4}} = \frac{7\sqrt{2}}{2}$

② $\frac{8}{\sqrt{5x}} \cdot \frac{\sqrt{5x}}{\sqrt{5x}} = \frac{}{\sqrt{25x^2}} = \frac{8\sqrt{5x}}{5x}$

③ $\frac{6}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6\sqrt{3}}{\sqrt{9}\ 3} = 2\sqrt{3}$

④ $\frac{12}{\sqrt[3]{9x^1}} \cdot \frac{\sqrt[3]{3x^2}}{\sqrt[3]{3x^2}} = \frac{12\sqrt[3]{3x^2}}{\sqrt[3]{27x^3}} = \frac{12\sqrt[3]{3x^2}}{3x}$

$\frac{4\sqrt[3]{3x}}{x}$

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

$9-\sqrt{4}$

$9-2$

7

(6)

$$\frac{9}{(\sqrt{5}+2)} \cdot \frac{(\sqrt{5}-2)}{(\sqrt{5}-2)} = \frac{9\sqrt{5}-18}{\sqrt{25}-4} = \frac{9\sqrt{5}-18}{1}$$

$9\sqrt{5}-18$

7

$$\frac{(8-\sqrt{7})(4-2\sqrt{7})}{(4+2\sqrt{7})(4-2\sqrt{7})} = \frac{32-16\sqrt{7}-4\sqrt{7}+2\sqrt{49}}{16-4\sqrt{49}}$$

$16-4(7)$

$16-28$

$$\frac{46-20\sqrt{7}}{-12}$$

$$\frac{23-10\sqrt{7}}{-6}$$