

Algebra 2
Dividing Radicals

Name: Key
Date: _____ Block: _____

Simplify completely.

$$1.) \frac{8}{\sqrt{10}} \cdot \frac{\sqrt{10}}{\sqrt{10}} =$$

$$\frac{8\sqrt{10}}{\sqrt{100}} = \frac{8\sqrt{10}}{10}$$

$$= \frac{4\sqrt{10}}{5}$$

$$2.) \frac{\sqrt{3}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} =$$

$$\frac{\sqrt{21}}{\sqrt{49}} = \frac{\sqrt{21}}{7}$$

$$3.) \frac{2}{\sqrt{10xy^3}} \cdot \frac{\sqrt{10xy^3}}{\sqrt{10xy^3}} \quad * \frac{3}{2} = |2|$$

$$\frac{2\sqrt{10xy^3}}{\sqrt{100x^2y^6}} = \frac{2\sqrt{10xy^3}}{10xy^3}$$

$$= \frac{2\sqrt{10xy}}{10xy^3} = \frac{\sqrt{10xy}}{5xy^2}$$

$$4.) \sqrt[3]{\frac{b^4}{a}} = \frac{\sqrt[3]{b^4}}{\sqrt[3]{a}} \cdot \frac{\sqrt[3]{a^2}}{\sqrt[3]{a^2}} \quad * \frac{4}{3} = |2|$$

$$\frac{\sqrt[3]{b^4a^2}}{\sqrt[3]{a^3}} = \frac{b\sqrt[3]{ba^2}}{a}$$

5.) State the radical conjugate for the expression $\frac{2}{3-\sqrt{5}}$

$$3 + \sqrt{5}$$

$$6.) \frac{2}{9-\sqrt{2}} \cdot \frac{9+\sqrt{2}}{9+\sqrt{2}}$$

$$\frac{18 + 2\sqrt{2}}{81 + 9\sqrt{2} - 9\sqrt{2} - \sqrt{4}}$$

$$\frac{18 + 2\sqrt{2}}{81 - 2} = \frac{18 + 2\sqrt{2}}{79}$$