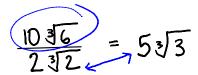
2 
$$(\sqrt{2})^5$$
 is equal to ...  
a)  $\sqrt{10}$   
b)  $5\sqrt{2}$   
c)  $4\sqrt{2}$   
d)  $32$   
 $\sqrt{2}$   $\sqrt{2}$   $\sqrt{2}$   $\sqrt{2}$   $\sqrt{2}$ 

Does



In general, when dividing radicals divide coefficients by coefficients and radicands by radicands

$$\frac{m\sqrt[4]{a}}{n\sqrt[4]{b}} = \frac{m}{n}\sqrt[4]{a}$$

Ex. Simplify

a) 
$$\frac{\sqrt{28\chi^2}}{\sqrt{7\chi}} = \frac{\sqrt{7.4.\chi.\chi}}{\sqrt{7\chi}} = \frac{2\sqrt{7}}{\sqrt{7}}$$

b) 
$$\frac{2\sqrt{54}}{5\sqrt{24}} = \frac{2\sqrt{9}}{5\sqrt{4}} = \frac{2(3)}{5(2)} = \frac{3}{5}$$

c) 
$$\frac{2\sqrt{150n^3}}{\sqrt{8n}}$$
  $\frac{2\sqrt{75n^2}}{\sqrt{4}} = \sqrt{75n^2} = \sqrt{25\times3\times n^2} = 5n\sqrt{3}$ 

Sometimes, the roots do not divide and the expression is left with a radical in the denominator. In this case, rationalize the denominator.

Examples.

a) 
$$\sqrt{5} \cdot \sqrt{2} = \frac{\sqrt{10}}{2}$$

b) 
$$\frac{5\sqrt{2}}{2\sqrt{6}} = \frac{5}{2\sqrt{3}} \cdot \sqrt{3} = \frac{5\sqrt{3}}{6}$$

c) 
$$\frac{7\sqrt{32y}}{5\sqrt{63}} = \frac{7(4\sqrt{2y})}{5(3\sqrt{7})} = \frac{28\sqrt{2}y \cdot \sqrt{7}}{15\sqrt{7} \cdot \sqrt{7}} = \frac{28\sqrt{14y}}{105} = \frac{4\sqrt{4y}}{16}$$

d) 
$$\frac{3}{\sqrt{y}} \cdot \sqrt{y} = \frac{3\sqrt{y}}{y}$$
  $\sqrt{45} = \sqrt{9 \times 5} = 3\sqrt{5}$ 

d) 
$$\frac{3}{\sqrt{y}} \cdot \sqrt{y} = \frac{3\sqrt{y}}{y}$$
  $\sqrt{45} = \sqrt{9} \times 8 = 3\sqrt{5}$   
e)  $\frac{3\sqrt{135m^5}}{\sqrt{21m^3}}$   $\frac{3\sqrt{45m^2}}{\sqrt{7}} = \frac{9\sqrt{5m^2} \cdot \sqrt{7}}{\sqrt{7} \cdot \sqrt{7}} = \frac{9\sqrt{35m^2}}{7}$   
 $= \frac{9m\sqrt{35}}{7}$ 

$$f) \frac{1}{\sqrt[3]{3}} \cdot \sqrt[3]{3^2} = \sqrt[3]{9}$$

$$\sqrt[3]{3} \cdot \sqrt[3]{3^2}$$

Quiz next class on add/subtract/multiplying radicals

not lord <u>Calculators</u> - Natural view - Write view.