Which of these are rational numbers?

Rational numbers are any number that can be written as a fraction.

$$1. 12.8 = \frac{12.8}{10}$$

$$2.\sqrt{25} = 5 = \frac{5}{1}$$

If a number isn't rational then it is Irrational

What is the smallest number you could replace? with in order to be able to do the square root?

2.
$$\sqrt{12 \cdot ?}$$
= $\sqrt{12 \cdot 3}$
= $\sqrt{36}$ = (

Simplify as much as possible:

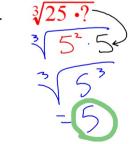
1.
$$\sqrt{6} \cdot \sqrt{6}$$

2.
$$\sqrt[3]{7} \cdot \sqrt[3]{7}$$

far as you

What is the smallest number you could replace? with in order to be able to do the cube root?





Sec 7-2: Rationalizing Denominators of Radical Expressions

To rationalize a denomintor means to remove any irrational number from the denominator.

Rationalize each denominator and simplify. Assume all variables are positive.

1.
$$\frac{2}{\sqrt{11}} \cdot \frac{\sqrt{11}}{\sqrt{11}}$$

$$\frac{10}{\sqrt{6w}} \cdot \frac{\sqrt{6w}}{\sqrt{6w}}$$

$$= \frac{10\sqrt{6w}}{\sqrt{6\sqrt{6w}}}$$

$$= \frac{\sqrt{6w}}{\sqrt{6w}}$$

3.
$$\frac{10}{\sqrt{12}} \cdot \frac{3}{\sqrt{3}} = \frac{10\sqrt{3}}{\sqrt{3}} = \frac{10\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3}}{\sqrt{3}}$$

Rationalize each denominator and simplify.

1.
$$\frac{2}{\sqrt{31}} \cdot \frac{31}{31}$$

$$2. \quad \frac{7}{\sqrt{8}} \cdot \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{16}}$$

Rationalize each denominator and simplify.

1.
$$\frac{2}{\sqrt[3]{7}}$$

$$2. \frac{1}{\sqrt[3]{25}} = \frac{1}{\sqrt[3]{5}} \cdot \frac{\sqrt[3]{5}}{\sqrt[3]{5}}$$

$$=\frac{2\sqrt{7^2}}{\sqrt[3]{3}}$$

$$=\frac{2\sqrt[3]{7^2}}{\sqrt[3]{3}}$$

3.
$$\frac{18}{\sqrt[3]{4}} = \frac{18}{\sqrt[3]{2}} \cdot \frac{\sqrt[3]{2}}{\sqrt[3]{2}} = \frac{18\sqrt[3]{2}}{\sqrt[3]{2}} = \frac{18\sqrt[3]{2}}{\sqrt[3]$$

Rationalize each denominator and simplify.

2.
$$\frac{41}{\sqrt[5]{8}} = \frac{41}{\sqrt[5]{2^3}} \cdot \frac{\sqrt[5]{2^2}}{\sqrt[5]{2^2}} = \frac{41\sqrt[5]{4}}{\sqrt[5]{2^5}} = \frac{41\sqrt[5]{4}}{\sqrt[5]{2^5}} = \frac{41\sqrt[5]{4}}{\sqrt[5]{2^5}}$$

Rationalize each denominator and simplify.

1.
$$\frac{15}{\sqrt[4]{27}}$$
 $\sqrt[4]{3}$

2.
$$\frac{41}{\sqrt[5]{8}}$$

$$= \frac{15\sqrt[3]{3}}{\sqrt[4]{3}} = \frac{15\sqrt[4]{3}}{3} = 5\sqrt[4]{3}$$