Simplify. $\sqrt{\frac{49m^{12}}{36m^4}} = \frac{7m^6}{6m^2} = \boxed{\frac{7m^4}{6}}$

Simplify. $\sqrt{\frac{72c^{11}}{3c^2}} = \sqrt{24c^9}$

$\sqrt{6 \cdot 4 \; c^8 \cdot c^1}$

$\boxed{2c^4\sqrt{6c}}$

Simplify. $\sqrt{\frac{98b}{50b^{11}}} = \sqrt{\frac{49}{25b^{10}}} = \boxed{\frac{7}{5b^5}}$

Simplify. $\sqrt{\frac{14c^5}{8d^{12}}}$

Which of these is are rational numbers?

1. 12.8 RATIONAL

2. $\sqrt{25}$ RATIONAL

3. $\sqrt{3}$ irrational

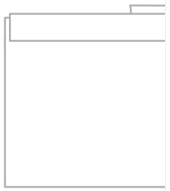
4. $\frac{19}{7}$ RATIONAL

Rational Number: any number that can be written as the ratio of two integers. This includes terminating decimals and repeating decimals.

What is $\sqrt{3}$ called?

irrational number

Irrational Numbers: Non-terminating and non-repeating decimals.



In mathematics we don't want irrational numbers to be left in denominators so we try to remove them.

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

To rationalize a denominator we multiply the numerator and denominator by whatever will help us eliminate the radical in the denominator.

Simplify:

$\sqrt{7} \cdot \sqrt{7} = 7$

$\sqrt{3c} \cdot \sqrt{3c} = 3c$

Simplify. $\frac{7}{\sqrt{10}} \cdot \frac{\sqrt{10}}{\sqrt{10}} = \frac{7\sqrt{10}}{10}$

Rationalize each denominator

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

2. $\frac{10}{\sqrt{6w}} \cdot \frac{\sqrt{6w}}{\sqrt{6w}} = \frac{10\sqrt{6w}}{6w} = \frac{5\sqrt{6w}}{3w}$

Rationalize each denominator

4. $\frac{7}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}} = \frac{7\sqrt{8}}{8} = \frac{14\sqrt{2}}{8} = \frac{7\sqrt{2}}{4}$

Rationalize each denominator

5. $\frac{8\sqrt{3}}{\sqrt{11d}} \cdot \frac{\sqrt{11d}}{\sqrt{11d}} = \frac{8\sqrt{33d}}{11d}$

Rationalize each denominator

6. $\frac{15h}{\sqrt{25h^3}} \cdot \frac{\sqrt{25h^3}}{\sqrt{25h^3}} = \frac{15h\sqrt{25h^3}}{25h^3}$

rationalize then simplify

$= \frac{25h^2\sqrt{h}}{25h^3} = \frac{3\sqrt{h}}{h}$

simplify then rationalize

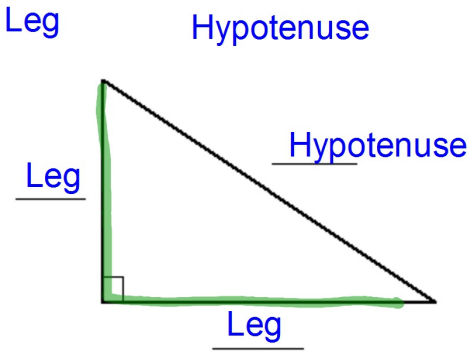
$\frac{15h}{\sqrt{25h^3}} = \frac{15h}{5h\sqrt{h}} \cdot \frac{\sqrt{h}}{\sqrt{h}} = \frac{3h\sqrt{h}}{h^2} = \frac{3\sqrt{h}}{h}$

You can now finish Hwk #28.

Sec 11-1

pages 581-582

Problems 6-8, 14-16, 21, 22, 33, 35, 44, 47, 50



The legs of a right triangle are:

- the sides that form the right angle.

The hypotenuse of a right triangle is:

- the longest side
- the side opposite the right angle