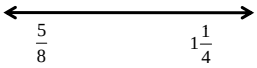
Chapter 11 Review

Property of Rational Numbers

- You CAN change a number into a fraction
- It is a terminating decimal
- It is a nonterminating AND repeating decimal
- You CAN find the perfect square root of the radicand

Finding numbers between fractions

Find the number one-fourth of the way from $\frac{5}{8}$ to $1\frac{1}{4}$.



Converting repeating decimals into fractions

1) $.\overline{63}$

Simplifying Square Roots

Product Property of Square Roots

$$\sqrt{a \bullet b} = \sqrt{a} \bullet \sqrt{b}$$

$\sqrt{36}$ $-\sqrt{900}$

Simplifying Square Roots

Quotient Property of Square Roots

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$$

$\sqrt{\frac{36}{121}}$

Simplifying Irrational Square Roots

$3\sqrt{28}$ $7\sqrt{125}$

Practice

3) $\sqrt{(c^6)}$ 4) $\sqrt{d^8}$

No matter what d is, d^4 is always positive

When to Absolute Value Signs

If you simplify a root and the variable has an ODD exponent PUT ABSOLUTE VALUE SIGNS AROUND IT.

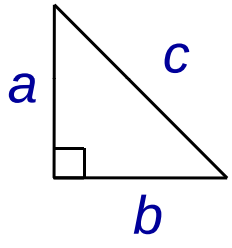
If you simplify a root and the variable has an EVEN exponent LEAVE IT ALONE.

Practice

5) $\sqrt{144x^2}$ 6) $\sqrt{25n^{12}}$

The Pythagorean Theorem:

$$a^2 + b^2 = c^2$$



Simplifying Summary

- Make sure you cannot divide the "radicand" by a perfect square (except for 1)
- No radicals can be in the denominator

Lesson

Simplify

7) $25\sqrt{2}+2\sqrt{27}-3\sqrt{98}$

8) $\sqrt{15}-\sqrt{\frac{3}{5}}$

9) $\sqrt{\frac{5}{11}}-\sqrt{\frac{11}{5}}$

Review

10) $(c+4)(c-4)$

Difference of Squares

$$(a+b)(a-b)=a^2-b^2$$

11) $(x+5)^2$

Perfect Square

$$(a+b)^2=a^2+2ab+b^2$$

Lesson

Simplify

12) $\left(\sqrt{7}-5\right)\left(\sqrt{7}+5\right)$

Lesson

Simplify

13) $\left(\sqrt{7}+11\right)^2$

Lesson

Solve

14) $\sqrt{\frac{3x}{2}} = 120$

Solve

15) $\sqrt{6y-2} - 3 = 7$

Solve

16) $\sqrt{5x^2 + 16} - 3x = 0$