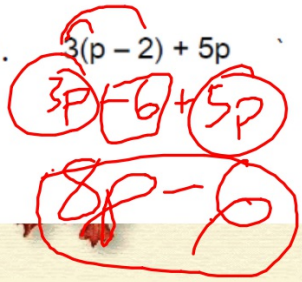
Warm - up

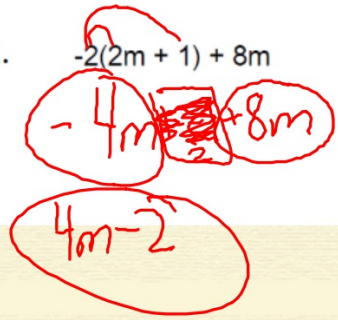
Thursday 8/22

Simplify

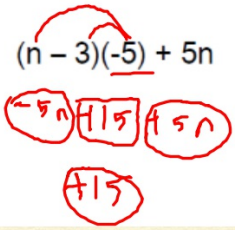
1. $3(p - 2) + 5p$



2. $-2(2m + 1) + 8m$



3. $(n - 3)(-5) + 5n$



11, 16

(11) $\frac{16x^3y^8}{24x^{-2}y^{-5}} = \frac{2x^3x^2y^8y^5}{3} = \frac{2x^{3+2}y^{8+5}}{3}$

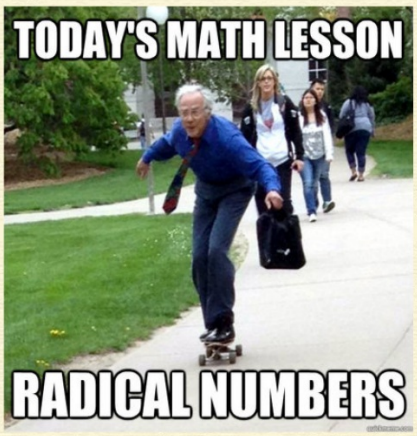
$= \frac{2x^5y^{13}}{3}$

(16) $\frac{p^3q^{-2}r^7}{9p^5q} = \frac{p^3r^7}{9p^5qq^2} = \frac{p^3r^7}{9p^5q^{1+2}}$

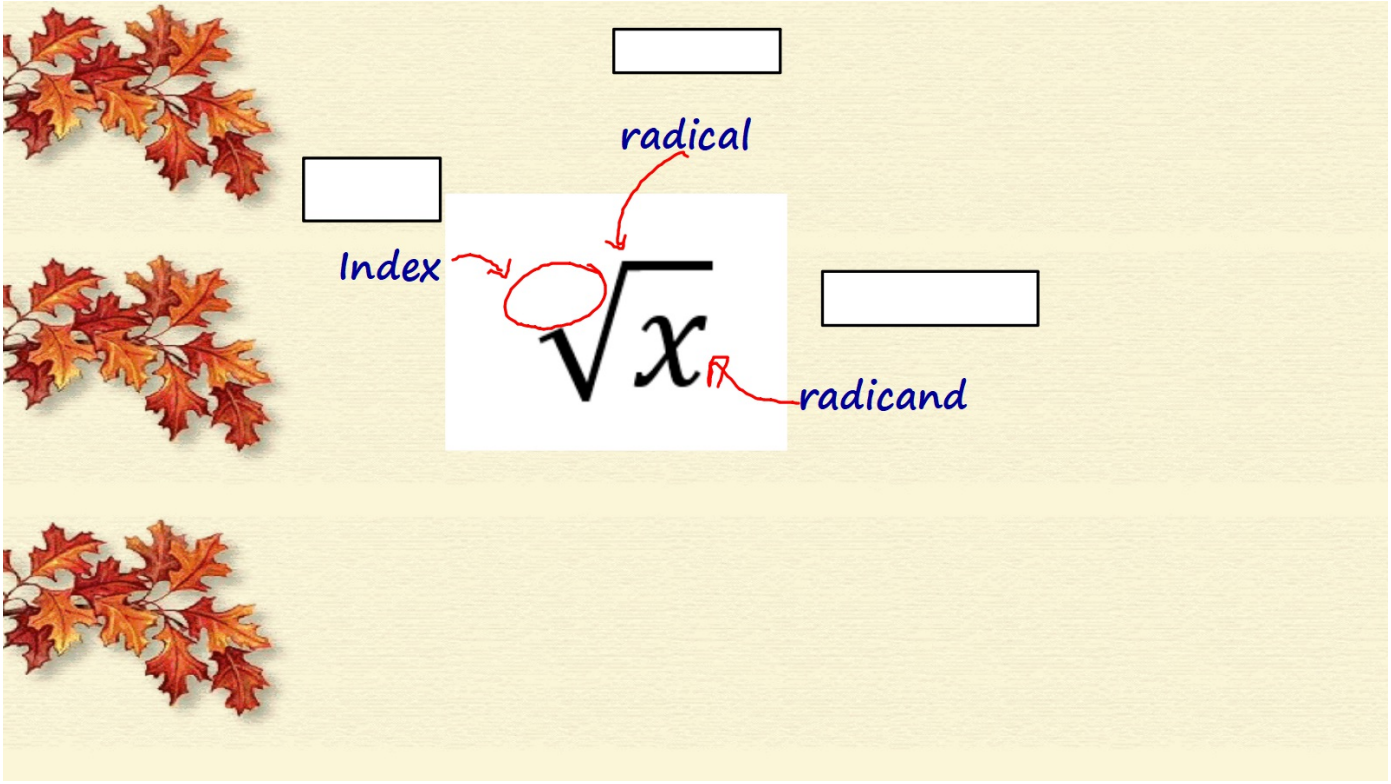
$= \frac{p^3r^7}{9p^5q^3} = \frac{p^{3-5}r^7}{9q^3} = \frac{p^{-2}r^7}{9q^3} = \boxed{\frac{r^7}{9q^3p^2}}$

Simplifying Radicals

Today I can simplify rational exponents using power over root.



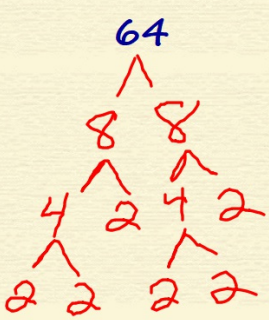
I can speak about rational exponents using: power, root, radical, base, and rational exponent.

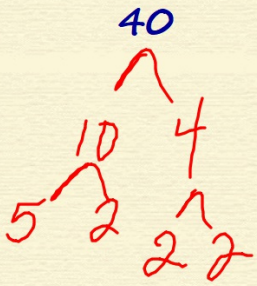

radical
Index
radicand

What is the difference between a square root and a cube root?

Square root	Cube root
$\sqrt[2]{x}$	$\sqrt[3]{x}$

Create a factor tree for the following:





Simplify Radicals

"The story of going to the party and carpooling."

Simplify Each of the following:

$\sqrt{12}$

$2\sqrt{3}$

$\sqrt{68}$

$2\sqrt{17}$

$2\sqrt{75}$

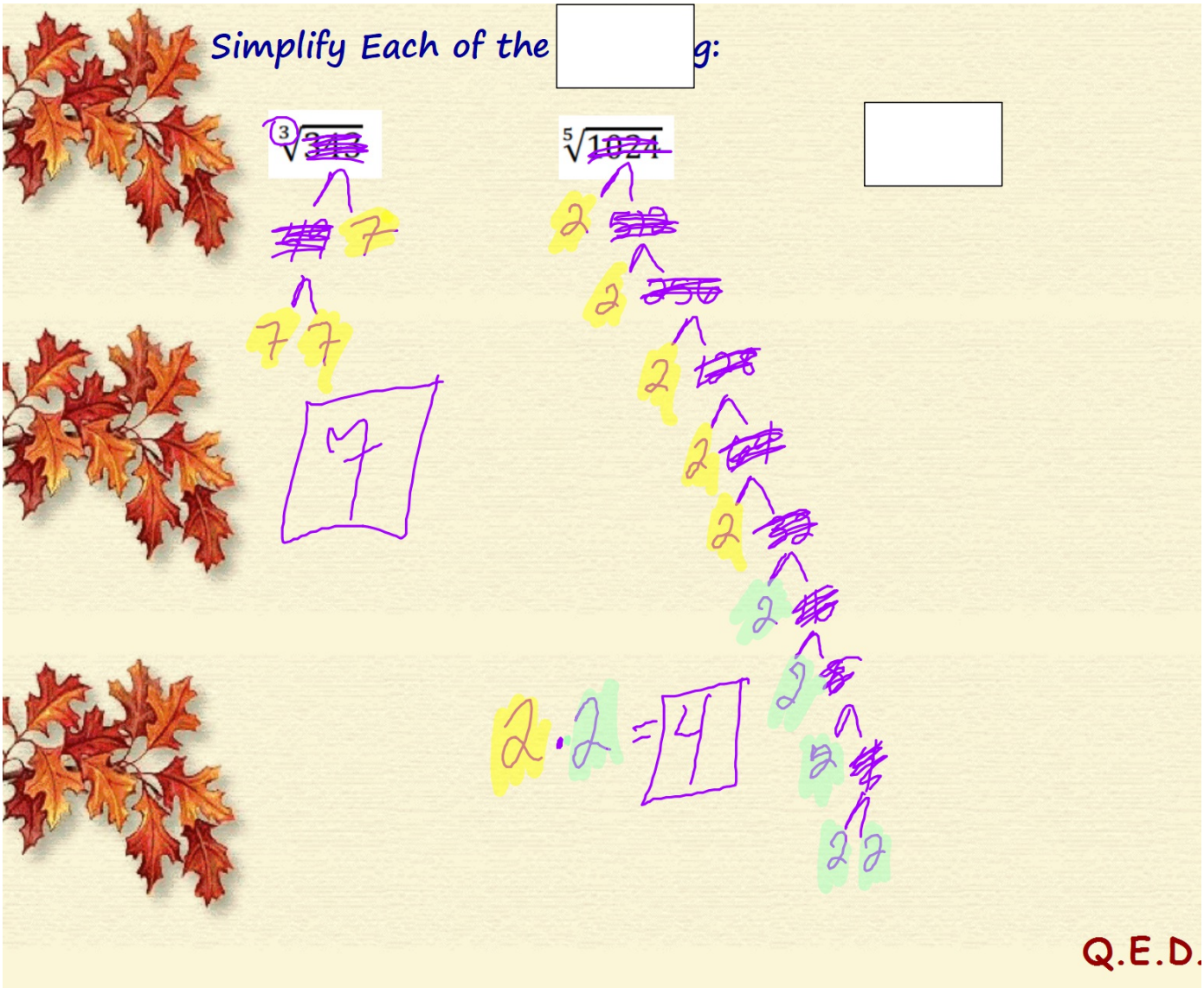
$2 \cdot 5\sqrt{3}$

$10\sqrt{3}$

Simplify Each of the [redacted]g:

$\sqrt[3]{343}$

$\sqrt[5]{1024}$



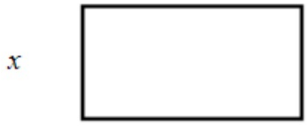
Q.E.D.

Warm - up

Friday 8/23

Find the area, express as a binomial.

2.



$12 \cdot (2+x)$

$24 + 12x$

$x(x+8)$

$x^1 \cdot x^1 = x^2 + 8x$

Simplify Each of the following:

$\sqrt{252}$

2 · 126
2 · 63
3 · 21
7 · 3

$2 \cdot 3\sqrt{7}$

$6\sqrt{7}$

$\sqrt{\frac{20}{81}} = \frac{\sqrt{20}}{\sqrt{81}} = \frac{2\sqrt{5}}{9}$

$\sqrt{20}$

10 · 2
5 · 2

$2\sqrt{5}$

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

b b b

$b\sqrt{b}$

Simplify Each of the following:

$\sqrt{x^5y}$

$xxxxxy$

$x \cdot x\sqrt{xy}$

$x^2\sqrt{xy}$

$\sqrt{40p^2}$

$2 \cdot 2 \cdot 10 \cdot p \cdot p$

$5 \cdot 2$

$2p\sqrt{10}$

$-2\sqrt{12x^3a^4}$

$3 \cdot 2 \cdot 2$

xxx

$aaaa$

$-2 \cdot 2xaa\sqrt{3x}$

$-4xa^2\sqrt{3x}$

Using your calculator:

$\sqrt{4} =$ 2

The square root of 4

$4^{\frac{1}{2}} =$ 2

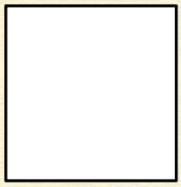
4 to the 1/2 power

How do we evaluate rational exponents?

$$64^{\frac{1}{2}}$$

Power

Root



Re-write the following:

$\sqrt[2]{22^1} = 22^{\frac{1}{2}}$

$(7w)^{\frac{1}{2}} = \sqrt{7w}$

$2\sqrt{w} = 2(w)^{\frac{1}{2}}$

$2a\sqrt{w} = 2a(w)^{\frac{1}{2}}$

$2a w^{\frac{1}{2}}$

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

Simplify Each of the f g:

$9^{\frac{1}{2}}$

$\sqrt{9}$

3

$(x^6)^{\frac{1}{2}} = x^{6 \cdot \frac{1}{2}}$

x^3

$\sqrt{x^6}$

$x \cdot x \cdot x$

x^3

$(9n^4)^{\frac{1}{2}}$

$(9n^{4 \cdot \frac{1}{2}}) =$

$(9^{\frac{1}{2}} n^{4 \cdot \frac{1}{2}}) =$

$3n^2$

Simplify Each of the fo g:

$(81m^6)^{\frac{1}{2}}$

$(81^{\frac{1}{2}} m^{6 \cdot \frac{1}{2}})$

$\sqrt{81}$

$9m^3$

$36^{\frac{3}{2}}$

$\sqrt{36^3}$

$\sqrt{46656}$

$(\sqrt{36})^3$

$(6)^3$

216

$512^{\frac{1}{3}}$

$\sqrt[3]{512}$

2 256

2 128

2 64

2 32

2 16

2 8

2 4

2 2

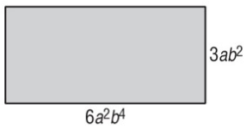
2 · 2 · 2

8

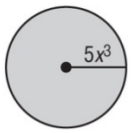
Mixed Review!

GEOMETRY Express the area of each figure as a monomial.

13.



14.



15.

More Review!

COUNTING The number of three-letter "words" that can be formed with the English alphabet is 26^3. The number of five-letter "words" that can be formed is 26^5. How many times more five-letter "words" can be formed than three-letter "words"?

Find the length of the base of a rectangle when the area is $16x^5y^3$ and the height is $4xy^3$.

Q.E.D.