8-23-17 1st Trig

Prime numbers

- Can't be divided by anything other than 1 and itself
- Only has 2 factors

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, ...

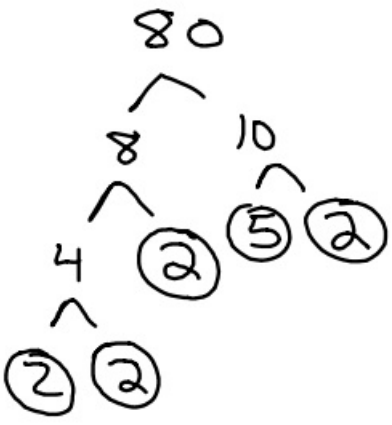
Prime factorization

- All #s can be written as the product of prime #s.

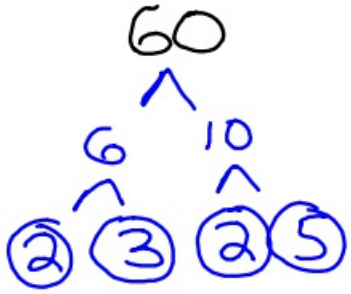
Ex: $80 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$

$18 = 2 \cdot 3 \cdot 3$

Factor Trees



$80 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$



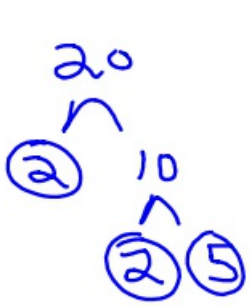
$60 = 2 \cdot 2 \cdot 3 \cdot 5$

Simplify $\frac{4}{10} = \frac{2}{5}$

We like to simplify $\sqrt{}$

$\sqrt{20} \approx 4.47\ldots$

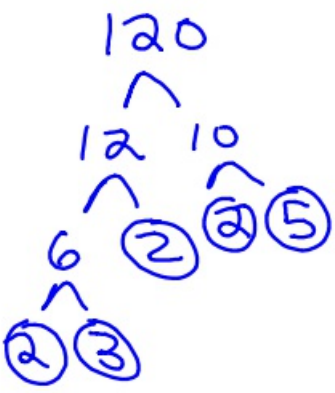
① Simplify $\sqrt{20}$



$= \sqrt{2 \cdot 2 \cdot 5}$

$2\sqrt{5}$

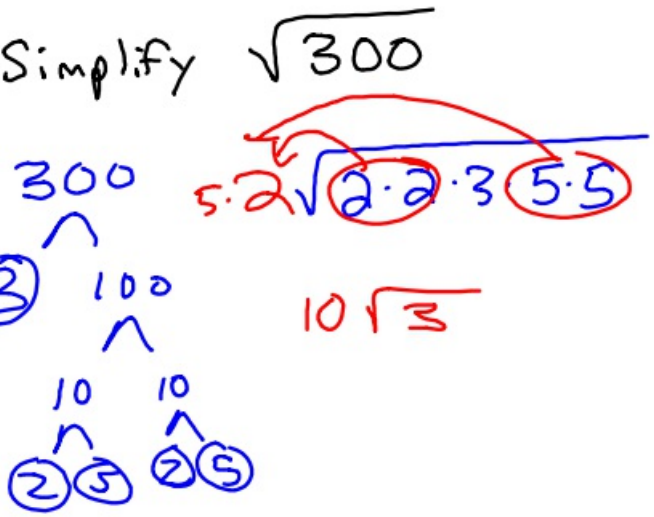
② Simplify $\sqrt{120}$



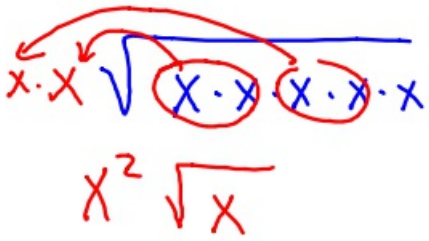
$\sqrt{2 \cdot 2 \cdot 2 \cdot 3 \cdot 5}$

$2\sqrt{30}$

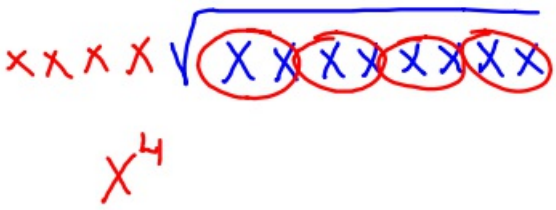
③ Simplify $\sqrt{300}$



④ $\sqrt{x^5}$

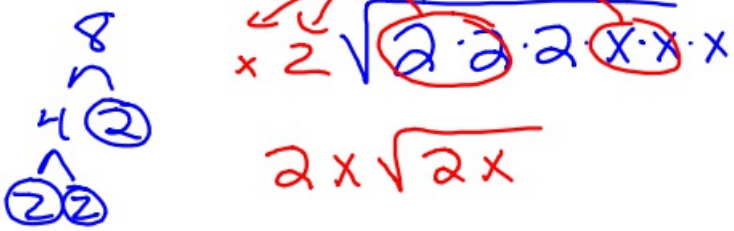


⑤ $\sqrt{x^8}$

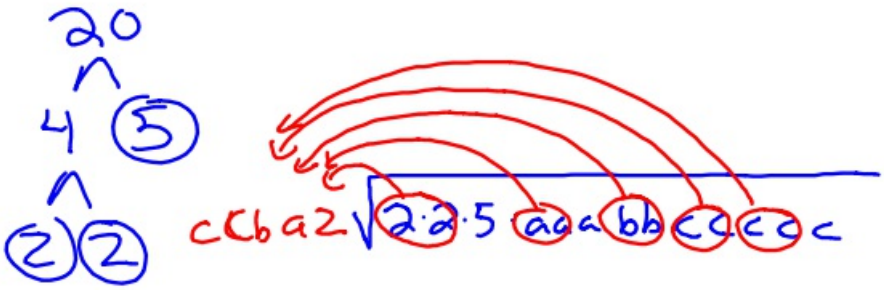


x^4

⑥ $\sqrt{8x^3}$

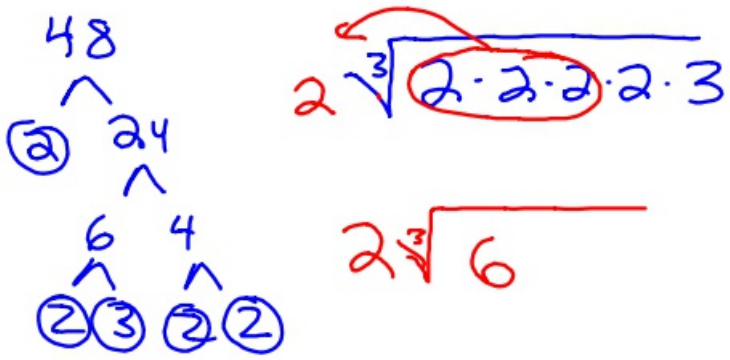


⑦ $\sqrt{20a^3b^2c^5}$



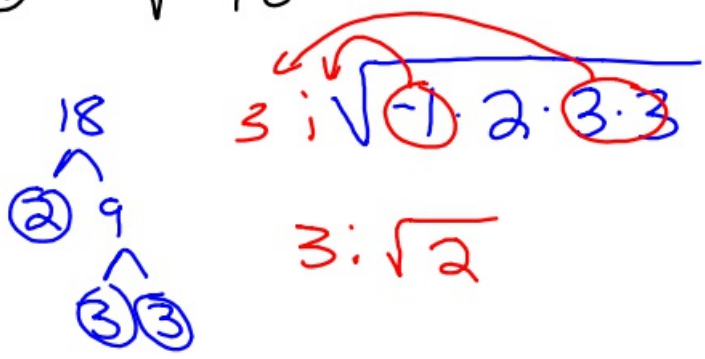
$2abc^2\sqrt{5ac}$

⑧ $\sqrt[3]{48}$



$\sqrt{-1} = i$

⑨ $\sqrt{-18}$



$3i\sqrt{2}$

8-23-17 3rd Trig

Prime numbers
- only divisible by 1 and itself
- has only 2 factors

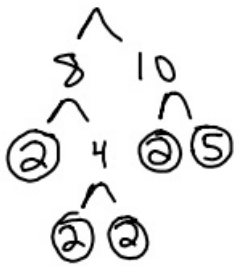
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37...

Prime factorization
- all numbers can be written as the product of prime #s

$24 = 2 \cdot 2 \cdot 2 \cdot 3$

Factor Trees

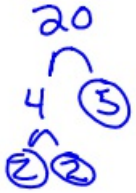
$80 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$



Simplify $\frac{4}{10} = \frac{2}{5}$

Simplify $\sqrt{20}$

$\approx 4.47...$

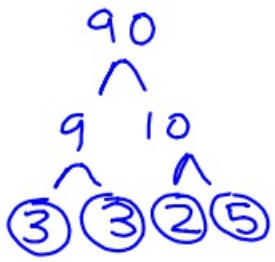


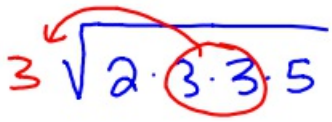
$\sqrt{20} =$

$\sqrt{2 \cdot 2 \cdot 5}$

$2\sqrt{5}$

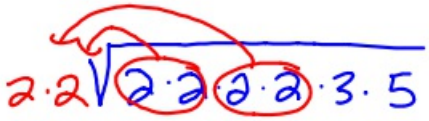
① Simplify $\sqrt{90}$





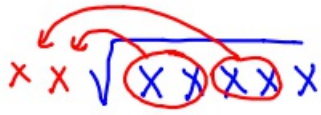
$3\sqrt{10}$

② Simplify $\sqrt{240}$



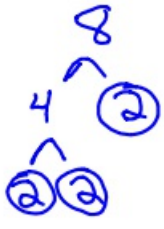
$4\sqrt{15}$

③ Simplify $\sqrt{x^5}$



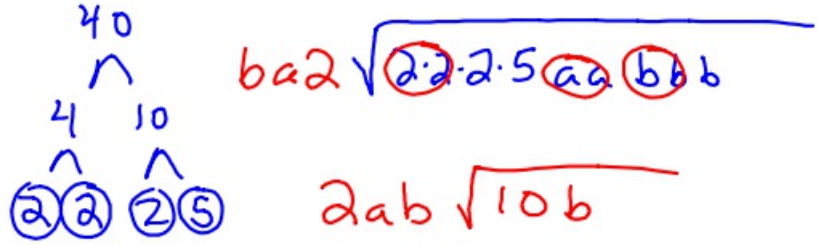
$x^2\sqrt{x}$

④ Simplify $\sqrt{8x^4}$

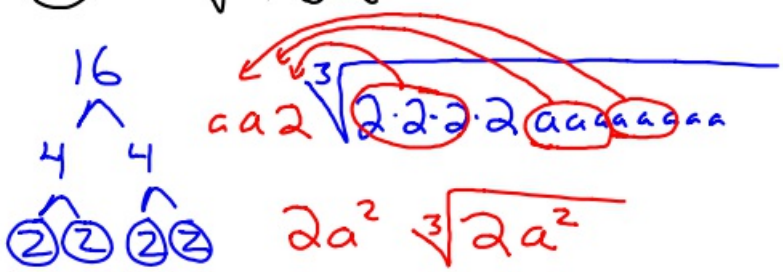


$2x^2\sqrt{2}$

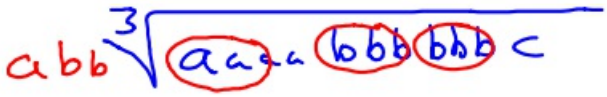
⑤ $\sqrt{40a^2b^3}$



⑥ $\sqrt[3]{16a^8}$



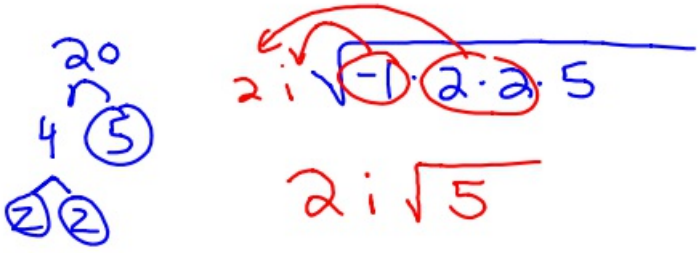
⑦ $\sqrt[3]{a^4b^6c}$



$ab^2\sqrt[3]{ac}$

$\sqrt{-1} = i$ imaginary #

⑧ $\sqrt{-20}$



8-23-17 4th Trig

Prime numbers

- Can only be divided by 1 and itself
- only have 2 factors

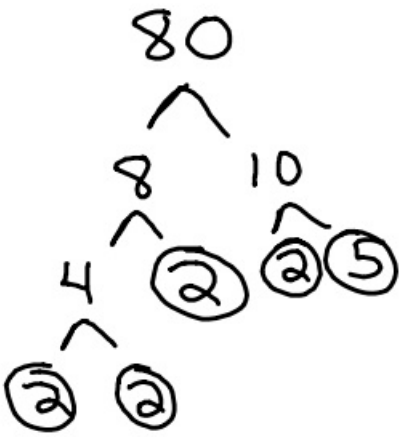
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, ...

Prime factorization

- all #s can be written as the product of prime #s.

$80 - 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$

Factor Tree

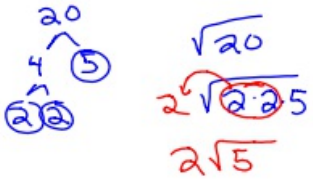


$80 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$

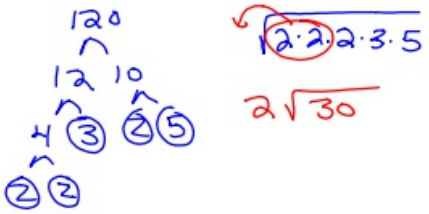
Simplify $\frac{4}{10} = \frac{2}{5}$

Simplify $\sqrt{20}$

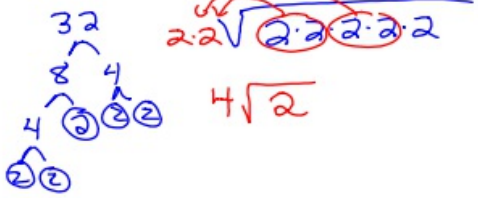
$\approx 4.47\ldots$



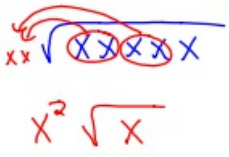
① Simplify $\sqrt{120}$



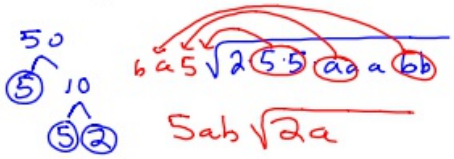
② Simplify $\sqrt{32}$



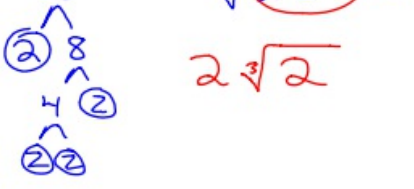
③ $\sqrt{x^5}$



④ $\sqrt{50a^3b^2}$



⑥ $\sqrt[3]{16}$



⑦ $\sqrt[3]{a^4 b^5 c^3}$

$cba\sqrt[3]{aaaa\,bbbbb\,ccc}$

$abc\sqrt[3]{ab^2}$

⑧ $\sqrt[3]{54a^5}$

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

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

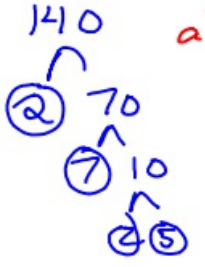
$\sqrt{-1} = i$ imaginary #

⑨ $\sqrt{-20}$

$2i\sqrt{-1\cdot 2\cdot 2\cdot 5}$

$2i\sqrt{5}$

⑩ $\sqrt{-140a^2}$



$a2i\sqrt{-1\cdot 2\cdot 2\cdot 5\cdot 7\cdot a\cdot a}$

$2ai\sqrt{35}$

$(2a\sqrt{35})i$