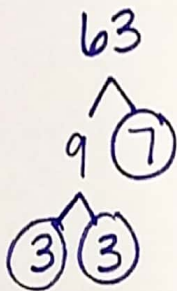


Aug 31

Simplify Radicals

(Ex1) Simplify: $\sqrt{63}$

Step 1: Make a factor tree.
Circle prime numbers.



Step 2: Write prime numbers under radical.

$$\sqrt{\cancel{3 \cdot 3} \cdot 7}$$

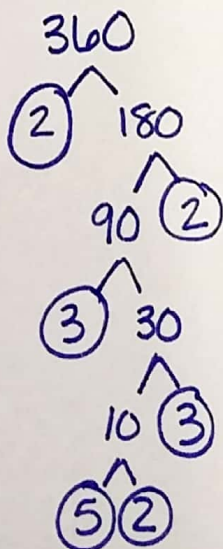
Step 3: Circle pairs.

Step 4: Cross out pairs.
Bring that number out once.

$$\boxed{3\sqrt{7}}$$

Step 5: Finish multiplying.

(Ex2) Simplify: $\sqrt{360}$

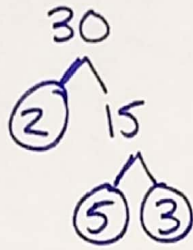


$$\sqrt{\cancel{2 \cdot 2} \cdot 2 \cdot \cancel{3 \cdot 3} \cdot 5}$$

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

$$\boxed{6\sqrt{10}}$$

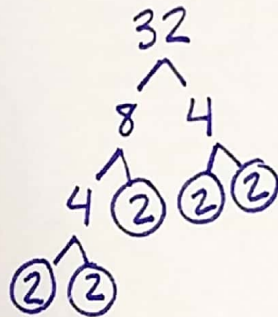
Ex3) Simplify: $\sqrt{30}$



$$\sqrt{2 \cdot 3 \cdot 5} \quad * \text{no pairs!}$$
$$\boxed{\sqrt{30}}$$

Ex4) Simplify: $\sqrt{-32}$
 $i\sqrt{32}$

* a negative under a radical will come out and turn into i



$$i\sqrt{\cancel{2 \cdot 2} \cdot \cancel{2 \cdot 2} \cdot 2}$$

$$2 \cdot 2 \cdot i\sqrt{2}$$

$$\boxed{4i\sqrt{2}}$$

Ex5) Simplify: $\sqrt{-7}$
 $i\sqrt{7}$



no tree,
prime number