If m and n are integers and $n \neq 0$, then

Simplify

olify
$$a^{\frac{m}{a}} = \left(a^{\frac{1}{a}}\right) = \left(\sqrt[n]{a}\right)^m = \sqrt[n]{a^m}$$

1.
$$64^{\frac{2}{5}}$$
 2. $64^{\frac{3}{2}}$ 3 3. $216^{\frac{1}{5}}$ 4. a) $-64^{\frac{3}{5}}$ 2 b) $(-64)^{\frac{2}{5}}$ = $(3 - 64)^{\frac{3}{5}}$ = $(-4)^{\frac{3}{2}}$ = $(-4)^{\frac{3}{2}}$

$$= 4^{\frac{5}{3}} = \frac{6.36^{2}}{36^{2}}$$

$$= (14) = \frac{1}{36}$$

$$= 2^{5} = \frac{1}{36}$$

$$= \frac{1}{36}$$

$$= \frac{1}{36}$$

7.
$$81^{\frac{3}{4}}$$

$$= \frac{1}{81^{3/4}}$$

$$= \frac{1}{(\sqrt[4]{81})^3} = \frac{1}{3^2} = \frac{1}{27}$$

Simplify

8.
$$7^{\frac{1}{2}} \cdot 7^{\frac{1}{2}}$$

$$= 7^{\frac{1}{2} + \frac{1}{2}}$$

$$= 7$$

$$2^{\frac{1}{2}} \cdot 3^{\frac{1}{2}}$$

$$2^{\frac{1}{2}} \cdot 3^{\frac{1}{2}}$$

$$2^{\frac{1}{2}} \cdot (2^{\frac{1}{2}})^{2} - 2^{\frac{1}{2}} \cdot 2^{\frac{1}{2}}$$

$$= 2^{\frac{1}{2} + \frac{1}{2}} \cdot 2^{\frac{1}{2} + \frac{1}{2}}$$

$$= 2^{\frac{1}{2} + \frac{1}{2}} \cdot 2^{\frac{1}{2} + \frac{1}{2}}$$

10.
$$\left(\frac{x^{\frac{2}{3}}}{y^{\frac{1}{5}}}\right)^{\frac{1}{5}}$$
11. $y^{\frac{1}{2}} \bullet y^{\frac{3}{10}}$
12. $\frac{x^{\frac{1}{2}} \bullet y^{-\frac{1}{3}}}{3^{\frac{1}{3}}}$

$$= y^{\frac{1}{2} + \frac{1}{10}}$$

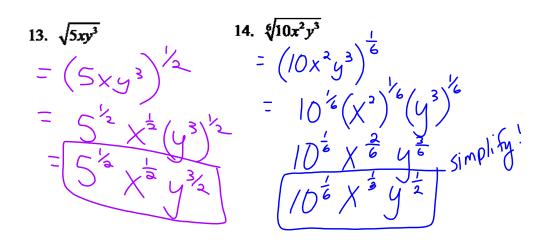
$$= y^{\frac{1}{2} + \frac{1}{10}}$$

$$= y^{\frac{1}{2} + \frac{1}{10}}$$

$$= y^{\frac{1}{5}} \bullet y^{\frac{1}{5}}$$

$$= y$$

Write in exponential form



NEW LESSON PART 1---SOLVING RADICAL EQUATIONS

Solve. Check for extraneous solutions.

Ex.1
$$3+\sqrt{2x-3}=8$$
-3
Isolate the radical (get the radical all alone)
$$2x-3=5$$

$$2x-3=25$$

$$+3+3$$

$$2x=28$$

$$x=/4$$

Always check in the original problem

Check:

$$3+\sqrt{2x-3}=8$$

 $3+\sqrt{2(+)}-3 \stackrel{?}{=} 8$
 $3+\sqrt{28-3}=8$
 $3+\sqrt{28-3}=8$
 $3+\sqrt{2}=8$
 $3+\sqrt{2}=8$
 $3+\sqrt{2}=8$
 $3+\sqrt{2}=8$

Check:

$$17-4\sqrt[3]{x-1}=5$$

$$17-4\sqrt[3]{27}=5$$

$$17-4\sqrt[3]{27}=5$$

$$17-4(3)=5$$

$$17-12=5$$

$$5=5\sqrt{5}$$