

T7-4. I can evaluate, rewrite and solve expressions involving rational exponents fractions

Radicals

INDEX \downarrow 3

Radical symbol \leftarrow

radicand

NO NUMBER \downarrow

means $\frac{2}{2}$

$$\sqrt{4} = \sqrt[2]{4}$$

$$\sqrt{x} \rightarrow x^{\frac{1}{2}}$$

Radical Form

Exponential Form

denominator

$$\sqrt[2]{x^1}$$

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

$$\sqrt[2]{4^3} = 4^{\frac{3}{2}}$$

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

$$\sqrt[2]{(2xy)^1} = (2xy)^{\frac{1}{2}}$$

$$10\sqrt[3]{x} = 10x^{\frac{1}{3}}$$

$$(36xy)^{\frac{1}{5}} = \sqrt[5]{36xy}$$

$$12(m^{\frac{1}{3}}) = 12\sqrt[3]{m}$$

$$1. x^{\frac{1}{2}} =$$

$$2. y^{\frac{1}{3}} =$$

$$3. z^{\frac{1}{4}} =$$

$$4. m^{\frac{3}{4}} =$$

$$5. \sqrt{m} = m^{\frac{1}{2}}$$

$$6. \sqrt[5]{a} = a^{\frac{1}{5}}$$

$$7. 10\sqrt{x} = 10x^{\frac{1}{2}}$$

$$8. \sqrt[3]{xy} = (xy)^{\frac{1}{3}}$$
$$x^{\frac{1}{3}}y^{\frac{1}{3}}$$

Simplify Radicals

$$\sqrt[5]{x^{15}} = x^{\frac{15}{5}} = x^3$$

$$\sqrt[3]{3^6}$$

Primes

2

3

5

7

11

13

17

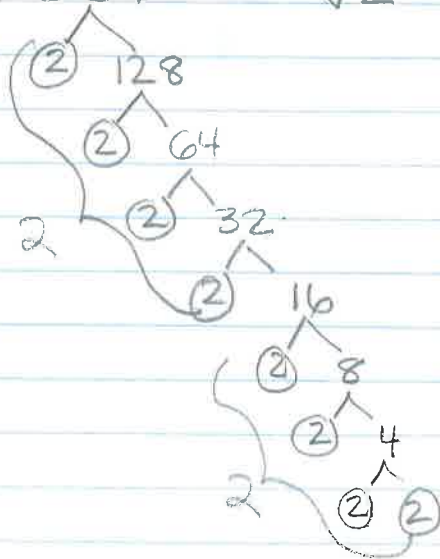
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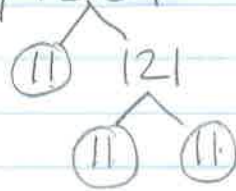
$$\sqrt{36} = \sqrt{2^2 \cdot 3^2} = 2^{\frac{2}{2}} 3^{\frac{2}{2}}$$



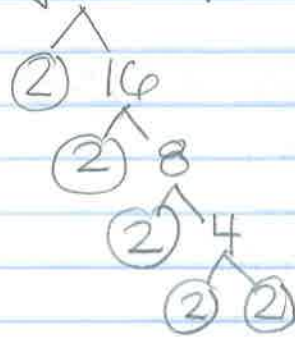
$$\sqrt[4]{256} = \sqrt[4]{2^8} = 2^{\frac{8}{4}} = 2^2 = \underline{4}$$



$$1331^{\frac{1}{3}} = \sqrt[3]{1331} = \sqrt[3]{11^3} = 11^{\frac{3}{3}} = 11$$



$$\left(\frac{1}{32}\right)^{\frac{1}{5}} = \frac{1^{\frac{1}{5}}}{32^{\frac{1}{5}}} = \frac{1}{\sqrt[5]{32}} = \frac{1}{\sqrt[5]{2^5}} = \frac{1}{2} \quad \left(\frac{a}{b}\right)^2 = \frac{a^2}{b^2}$$



① $\sqrt[4]{2401}$

② $4096^{\frac{1}{4}}$