

Simplifying Radical Expressions Part 1 - NOTES

Simplify.

1) $\sqrt{72}$

$$\sqrt{36 \cdot 2}$$

$$6\sqrt{2}$$

2) $\sqrt{200}$

$$\sqrt{100 \cdot 2}$$

$$10\sqrt{2}$$

3) $\sqrt{125}$

$$\sqrt{25 \cdot 5}$$

$$5\sqrt{5}$$

4) $-5\sqrt{128}$

$$-5\sqrt{64 \cdot 2}$$

$$-5 \cdot 8\sqrt{2}$$

$$-40\sqrt{2}$$

5) $\sqrt{r^4}$

$$r^2$$

CUT IN
HALF

6) $\sqrt{n^{10}}$

$$n^5$$

7) $\sqrt{k^7}$

$$\sqrt{k^6 \cdot k}$$

$$k^3 \sqrt{k}$$

8) $\sqrt{m^{11}}$

$$\sqrt{m^{10} \cdot m}$$

$$m^5 \sqrt{m}$$

9) $\sqrt{28u^4v^4}$

$$\sqrt{4 \cdot 7 \cdot u^4 \cdot v^4}$$

$$2u^2v^2\sqrt{7}$$

10) $3\sqrt{20x^{12}y^9z^7}$

$$3\sqrt{4 \cdot 5 \cdot x^{12} \cdot y^8 \cdot y \cdot z^6 \cdot z}$$

$$3 \cdot 2x^6y^4z^3\sqrt{5yz}$$

$$6x^6y^4z^3\sqrt{5yz}$$

Write each expression in exponential form.

11) $(\sqrt[3]{3x})^4$

$$(3x)^{\frac{4}{3}}$$

12) $(\sqrt[4]{10v})^7$

$$(10v)^{\frac{7}{4}}$$

13) $(\sqrt[3]{5b})^5$

$$(5b)^{\frac{5}{3}}$$

★ EXPONENT BECOMES
NUMERATOR, ROOT
BECOMES DENOMINATOR

Write each expression in radical form.

14) $x^{\frac{5}{4}}$

$$\sqrt[4]{x^5} = (\sqrt[4]{x})^5$$

15) $(10b)^{\frac{1}{6}}$

$$\sqrt[6]{10b}$$

16) $(2a)^{\frac{7}{5}}$

$$(\sqrt[5]{2a})^7 = \sqrt[5]{(2a)^7}$$