

Radicals and Rational Exponents

Date _____ Period _____

Write each expression in radical form.

1) $7^{\frac{1}{2}}$

2) $4^{\frac{4}{3}}$

3) $2^{\frac{5}{3}}$

4) $7^{\frac{4}{3}}$

5) $6^{\frac{3}{2}}$

6) $2^{\frac{1}{6}}$

Write each expression in exponential form.

7) $(\sqrt{10})^3$

8) $\sqrt[6]{2}$

9) $(\sqrt[4]{2})^5$

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

11) $\sqrt[3]{2}$

12) $\sqrt[6]{10}$

Write each expression in radical form.

13) $(5x)^{-\frac{5}{4}}$

14) $(5x)^{-\frac{1}{2}}$

15) $(10n)^{\frac{3}{2}}$

16) $a^{\frac{6}{5}}$

$$17) (6v)^{1.5}$$

$$18) m^{-\frac{1}{2}}$$

Write each expression in exponential form.

$$19) (\sqrt[4]{m})^3$$

$$20) (\sqrt[3]{6x})^4$$

$$21) \sqrt[4]{v}$$

$$22) \sqrt{6p}$$

$$23) (\sqrt[3]{3a})^4$$

$$24) \frac{1}{(\sqrt{3k})^5}$$

Simplify.

$$25) 9^{\frac{1}{2}}$$

$$26) 343^{-\frac{4}{3}}$$

$$27) 1000000^{\frac{1}{6}}$$

$$28) 36^{\frac{3}{2}}$$

$$29) (x^6)^{\frac{1}{2}}$$

$$30) (9n^4)^{\frac{1}{2}}$$

$$31) (64n^{12})^{-\frac{1}{6}}$$

$$32) (81m^6)^{\frac{1}{2}}$$