

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

**Write each expression in radical form.**

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

**Simplify.**

$$33) (n^4)^{\frac{3}{2}} =$$

$$34) (27p^6)^{\frac{5}{3}} =$$

$$35) (64m^4)^{\frac{3}{2}} =$$

$$36) (a^8)^{\frac{3}{2}} =$$

$$37) (9r^4)^{\frac{1}{2}} =$$

$$38) (216r^9)^{\frac{1}{3}} =$$

**Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.**

$$39) 2m^2 \cdot 4m^{\frac{3}{2}} \cdot 4m^{-2}$$

$$40) 3b^{\frac{1}{2}} \cdot b^{\frac{4}{3}}$$

$$41) \left(\frac{3}{p^2}\right)^{-2}$$

$$42) \left(\frac{1}{a^2}\right)^{\frac{3}{2}}$$

$$43) \left(\frac{1}{a^2}\right)^{\frac{3}{2}}$$

$$44) \left(m \cdot m^{-2} n^{\frac{5}{3}}\right)^2$$