

Match each of the following with the answer in its simplest form.

- A)  $x$       B)  $4^{\frac{1}{x}}$       C)  $10^{\frac{x}{3}}$       D)  $3\sqrt[3]{x}$       E)  $x^{\frac{1}{4}}$       F)  $10\sqrt{x}$       G)  $\frac{1}{x^2}$
- H)  $x^{16}$       I)  $x^2$       J)  $x^{\frac{1}{3}}$       K)  $x^{\frac{1}{14}}$       L)  $x^{\frac{5}{8}}$       M)  $x^{\frac{7}{5}}$       N)  $x^{\frac{5}{7}}$

1.  $\sqrt[5]{x^7}$

2.  $\sqrt[3]{2} + 9\sqrt{2}$

3.  $(x^7)(x^9)$

4.  $\left(x^{\frac{1}{2}}\right)^3$

5.  $\left(x^{\frac{3}{8}} \cdot x^{\frac{1}{8}}\right)^2$

6.  $\frac{20^{\frac{1}{x}}}{5^x}$

7.  $\sqrt{x} \cdot \sqrt[8]{x}$

8.  $\frac{x^{\frac{3}{7}} \cdot x^{\frac{4}{7}}}{x^{\frac{2}{7}}}$

9.  $\frac{x^{\frac{1}{2}}}{x^{\frac{3}{7}}}$

10.  $\left(\sqrt[4]{x}\right)^{-8}$

11.  $\sqrt[3]{x} + 2\sqrt[3]{x}$

12.  $5^{\frac{x}{3}} \cdot 2^{\frac{x}{3}}$

1

2

3

4

5

6

7

8

9

10

11

12

Evaluate the following. Round to the *hundredth* if necessary.

13.  $5x^7 = 12,372$

14.  $3x^5 = 219$

15. Evaluate:  $24^{\frac{5}{2}}$