1. What number is equal to $\sqrt{3}$?

2. Find all real square roots of $\sqrt{36}$.


$$\frac{\sqrt{36}}{\sqrt{25}}$$

Be sure to write your answer in simplest form.

4. Evaluate the following.

$$\sqrt{-36} = \cdots$$

$$-\sqrt{100} = \cdots$$

5. Simplify.

$$\sqrt{\sqrt{12}}$$

Assume that the variable represents a positive real number.

\[ \sqrt{4y^{12}} \]

Assume that the variable \( y \) represents a positive real number.

7. Simplify each expression.

Assume that the variables represent any real numbers.

\[ \sqrt{z^{6}} = \quad \]
\[ \sqrt{x^{12}} = \quad \]

8. Find the value of \( \sqrt[3]{8} \).

9. Evaluate the following.

(a) \( \sqrt[3]{-27} = \quad \)

(b) \( \sqrt[4]{-16} = \quad \)

10. Simplify.

\[ \frac{\sqrt[3]{27}}{\sqrt[6]{64}} \]

Be sure to write your answer in lowest terms.
11. Simplify.

\[ \sqrt[4]{81 u^{15}} \]

Assume that the variable represents a positive real number.

12. Simplify each radical expression as much as possible.

Assume that the variables represent any real numbers.

(a) \[ \frac{5}{\sqrt[5]{z}} = \] 

(b) \[ \frac{6}{\sqrt[6]{(3-y)^3}} = \]

13. Find the domain of the function.

\[ g(x) = \sqrt{x-4} \]

Write your answer using interval notation.

14. Find the domain of the function.

\[ h(x) = \sqrt{-x+5} \]

Write your answer using interval notation.

15. Find the domains of the functions \( f \) and \( g \).

\[ f(x) = \sqrt[3]{2x+6} \]

\[ g(x) = \sqrt[4]{x-4} \]

Write your answers using interval notation.
\[ \sqrt{45} \]

17. Simplify.
\[ \sqrt{108} \]

\[ \sqrt{50u^{10}} \]
Assume that the variable $u$ represents a positive real number.

\[ \sqrt{u^{13}} \]
Assume that the variable represents a positive real number.

20. Simplify.
\[ \sqrt{24v^{11}} \]
Assume that the variable represents a positive real number.

\[ \sqrt[3]{27t^5u^6} \]

Assume that all variables represent positive real numbers.

22. Write the following in simplified radical form.

\[ 3\sqrt[3]{32} \]

23. Write the following in simplified radical form.

\[ 4\sqrt[4]{u^{10}} \]

Assume that the variable represents a positive real number.

24. Write the following in simplified radical form.

\[ 4\sqrt[4]{80y^9} \]

Assume that the variable represents a positive real number.

25. Write the following expression in simplified radical form.

\[ 3\sqrt[3]{32x^9w^{12}} \]

Assume that all of the variables in the expression represent positive real numbers.