

Evaluate each expression that represents a real number.

1. $100^{1/2} = \sqrt{100} = 10$

2. $\sqrt{121} = 11$

3. $125^{1/3} = \sqrt[3]{125} = 5$

4. $\sqrt[3]{-27} = -3$

5. $\sqrt[4]{-16}$ No Real Sol.

6. $9^{-3/2} = \frac{1}{(\sqrt{9})^3} = \frac{1}{3^3} = \frac{1}{27}$

Simplify and express answers using *positive exponents only*.

7. $u^{1/3} u^{5/3} = u^{1/3+5/3} = u^{6/3} = u^2$

Add Exp's

8. $v^{-1/5} v^{6/5} = v^{-1/5+6/5} = v^{5/5} = v$

Add Exp's

9. $(x^{-3})^{1/6} = x^{-3 \cdot 1/6} = x^{-3/6}$

Mult. Exp's

$= x^{-1/2}$
 $= \frac{1}{\sqrt{x}}$

10. $(49a^4b^{-2})^{1/2} = 49^{1/2} a^2 b^{-1} = \frac{\sqrt{49} a^2}{b}$

Distribute Exp's

$= \frac{7a^2}{b}$

11. $\left(\frac{m^{-2}n^3}{m^4n^{-1}}\right)^2 = \left(\frac{n^3n}{m^4m^2}\right)^2 = \left(\frac{n^4}{m^6}\right)^2$

Flip, Add,
~~subtract~~
+
Distribute

$= \frac{n^8}{m^{12}}$

12. $\left(\frac{w^4}{9x^{-2}}\right)^{-1/2} = \frac{w^{-2}}{9^{-1/2} x^1} = \frac{\sqrt{9}}{w^2 x} = \frac{3}{w^2 x}$

Distribute Exp's