

$$50^{1/3}$$

9

ve Exponents and Reciprocal

4

$$50^{-3}$$

$$\sqrt[3]{50}$$

Powers with Negative Exponents

$$x^{-n} = 1/x^n \quad \text{AND} \quad 1/x^n = x^{-n} \quad x \neq 0$$

Flip It and Turn the Exponent Positive



Let's Give it a Try!

a) 3^{-2}
 $\frac{1}{3^2}$
 $= \frac{1}{9}$

b) $(4/5)^{-2}$
 $(\frac{5}{4})^2$
 $\frac{25}{16}$

c) $(1/2)^{-2}$
 $(\frac{2}{1})^2$
 $= 4$

d) $(-5)^{-3}$

$$\frac{1}{(-5)^3}$$

(Handwritten in blue)

$$\frac{1}{(-5)^3}$$

$$\frac{1}{(-5)^3}$$

$$\frac{1}{-125}$$

e) $8^{-2/3}$

$$\frac{1}{8^{2/3}}$$

(Handwritten annotations: "power" points to 2, "root" points to 3)

$$\frac{1}{(\sqrt[3]{8})^2}$$

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

$$\frac{1}{4}$$

f) $(1/9)^{-3/2}$

$$\left(\frac{9}{1}\right)^{3/2}$$

(Handwritten annotations: "power" points to 3, "root" points to 2)

$$(9)^{3/2}$$

$$(\sqrt{9})^3$$

$$(3)^3$$

$$=27$$

g) $(8/27)^{-2/3}$

$\left(\frac{27}{8}\right)$ 2 ← power
3 ← root

$\left(\frac{\sqrt[3]{27}}{\sqrt[3]{8}}\right)^2$

$\left(\frac{3}{2}\right)^2$
4/4

h) $(-125)^{-1/3}$

$\frac{1}{(-125)^{1/3}}$ root

$\frac{1}{\sqrt[3]{-125}}$

$\frac{1}{-5}$

i) $(-14/5)^0$

= 1

Try These !!

a) $144^{-1/2}$

$$\frac{1}{144^{1/2}}$$

$$\frac{1}{\sqrt{144}}$$

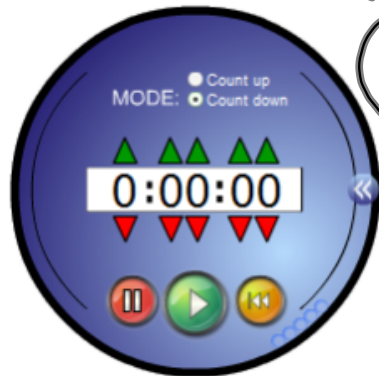
$$= \frac{1}{12}$$

a) $(-64)^{-1/3}$

$$\frac{1}{(-64)^{1/3}}$$

$$\left(\sqrt[3]{-64}\right)^{-1}$$

$$= -\frac{1}{4}$$



b) $(9/64)^{-1/2}$

$$\left(\frac{64}{9}\right)^{1/2}$$

$$\frac{\sqrt{64}}{\sqrt{9}}$$

$$= \frac{8}{3}$$

b) $(100/49)^{-3/2}$

$$\left(\frac{49}{100}\right)^{3/2}$$

$$\left(\frac{\sqrt{49}}{\sqrt{100}}\right)^3$$

$$\left(\frac{7}{10}\right)^3$$

$$\frac{343}{1000}$$

$$\frac{1}{9^3} = \frac{1}{729}$$

c) $81^{-3/2}$

$$\frac{1}{81^{3/2}}$$

$$= \frac{1}{(\sqrt{81})^3}$$

c) $0.36^{-1/2}$

$$\frac{1}{0.36^{1/2}}$$

$$\frac{1}{\sqrt{0.36}}$$

$$= \frac{1}{0.6}$$