

$$50^{1/3}$$

9

ve Exponents and Reciproci

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) $(4/5)^{-2}$
 $= \left(\frac{5}{4}\right)^2$
 $= \frac{25}{16}$

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

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

$$\frac{1}{(-5)^3}$$
$$\frac{1}{-125}$$

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

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

*2/3 power
3 index*

$$\frac{1}{(\sqrt[3]{8})^2}$$
$$\frac{1}{2^2}$$
$$= \frac{1}{4}$$

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

$$(9)^{3/2}$$
$$(\sqrt[2]{9})^3$$
$$(3)^3$$
$$27$$

g) $(8/27)^{-2/3}$ h) $(-125)^{-1/3}$ i) $(-14/5)^0$

$$\left(\frac{27}{8}\right)$$

$27/3 \leftarrow$ power
 $3 \leftarrow$ root

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

$$\left(\frac{3}{2}\right)^2 = \frac{9}{4}$$

$$\frac{1}{-125} \leftarrow \text{cube}$$

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

$$-\frac{1}{5}$$

$$= 1$$

Try These !!

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

$$\frac{1}{144^{1/2}}$$
$$\frac{1}{\sqrt{144}}$$
$$= \frac{1}{12}$$

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

$$\frac{1}{-64^{1/3}}$$
$$\frac{1}{\sqrt[3]{-64}} = \frac{1}{-4}$$

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

$$\left(\frac{64}{9}\right)^{1/2}$$
$$\left(\frac{\sqrt{64}}{\sqrt{9}}\right)$$
$$= \frac{8}{3}$$

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

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

$$\left(\frac{49}{100}\right)^{3/2}$$
$$\left(\frac{7}{10}\right)^3 = \frac{343}{1000}$$

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

$$\frac{1}{81^{3/2}}$$
$$= \frac{1}{(\sqrt{81})^3}$$

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

$$\frac{1}{0.36^{1/2}}$$
$$\frac{1}{\sqrt{0.36}}$$
$$= \frac{1}{0.6}$$