Unit 9 Objective 1 – What Power?

Very Brief Exponent Review:

$2^3 = 8$ $\quad 7^{-2} = \frac{1}{49} = \frac{1}{7^2}$ $\quad 5^0 = 1$ $\quad 36^{\frac{1}{2}} = 6 = \sqrt[2]{36}$

Using the "what power" notation the above examples would look like this:

What power $_2$ (8) = $2^{\boxed{3}} = 8$

What power $_7$ ($\frac{1}{49}$) = $7^{\boxed{-2}} = \frac{1}{49}$

What power $_5$ (1) = $5^{\boxed{0}} = 1$

What power $_{36}$ (6) = $36^{\boxed{\frac{1}{2}}} = 6$

Here's a few tougher ones:

What power $_{3/5}$ $(\frac{25}{9})$ $\left(\frac{3}{5}\right)^{\boxed{-2}} = \frac{25}{9}$

What power $_{9}$ $(\sqrt[3]{81})$ $9^{\boxed{\frac{2}{3}}} = \sqrt[3]{81}$

$9^x = \sqrt[3]{81}$ $9^x = \sqrt[3]{9^2}$ $9^x = 9^{\frac{2}{3}}$ $x = \frac{2}{3}$

What power $_{216}$ (6) $216^{\boxed{\frac{1}{3}}} = 6$

$216^x = 6$ $6^{3x} = 6^1$ $3x = 1$ $x = \frac{1}{3}$