Solving exponential and logarithmic equations   NAME:

Here, we will solve exponential and logarithmic equations a few different ways to give you solid examples with which to study. Try the suggested methods.

1. Solve $\log_6(3x+4)=3$. Do so by using the equivalent forms $x=b^y$ and $y=\log_b x$. By this, I mean simply rewrite the equation in exponential form. The solution will follow shortly.

2. Solve $\log_6(3x+4)=3$. Do this by applying the function $y=6^x$ to both sides. This gets us $6^{\log_6(3x+4)}=6^3$. Then use your log rules to simplify the left side. The solution will follow shortly.

3. Solve $3^{x^2} = 14$. Do so by taking the natural log of both sides. Then you'll use your log rules to simplify.

4. Solve $3^{x^2} = 14$. Do so by using the equivalent forms $x = b^y$ and $y = \log_b x$. By this, I mean simply rewrite the equation in logarithmic form. Then you'll use your change-of-base formula to simplify.

5. Solve $3^{x^2} = 14$. Do so by taking the log, base 3, of both sides. Then you'll use your log rules and change-of-base formula to simplify.