Logarithm Exercises

1. Solve for $z$:
\[ 2^{3z} = 20 . \]  

2. Let the mongoose population be given by:
\[ P(t) = 1234(2.5)^t . \]
At what $t$ does the mongoose population equal 10,000?

3. Sketch $f(x) = \log x$ and $g(x) = 10^x$. How are the two graphs related?

4. Solve for $z$:
\[ 2^z = z + 4 . \]