Solve for x.
log3 (2^x) = 10

$$\log_3 2^x = 10$$

$$3^{\log_3 2^x} = 3^{10}$$

$$2^x = 3^{10}$$

$$\log_2 2^x = \log_2 3^{10}$$

$$x = \log_2 3^{10}$$

$$x = \frac{\log 3^{10}}{\log 2}$$

$$x = \frac{10 \cdot \log 3}{\log 2}$$

$$x = 15.850$$