Quiz 1 --- Math 154

1. Solve the equation $2^{-100x} = (0.5)^{x-4}$.

$$2^{-100x} = \left( \frac{1}{2} \right)^{x-4} = 2^{-(x-4)}$$

$$-100x = -(x-4)$$

$$-99x = 4$$

$$x = -\frac{4}{99}$$

2. If $1000$ is invested at a rate of 12% per year compounded monthly, find the principal after 6 months.

$$A = P \left( 1 + \frac{r}{n} \right)^{nt}$$

$P = 1000, \ r = 0.12, \ n = 12, \ t = 0.5$

$$A = 1000 \ (1 + \frac{0.12}{12})^{12(0.5)}$$

$$= 1000 \ (1.01)^6 \approx 1061.5$$