Interest Formula Using Limit Laws

$$\lim_{r \to .09} 5000\left(1 + \frac{r}{12}\right)^{96}$$

$$= 5000\left[\lim_{r \to .09}\left(1 + \frac{r}{12}\right)\right]^{96}$$

$$= 5000\left[\lim_{r \to .09} 1 + \lim_{r \to .09} \frac{r}{12}\right]^{96}$$

$$= 5000\left[1 + \frac{\lim_{r \to .09} r}{\lim_{r \to .09} 12}\right]^{96}$$

$$= 5000\left[1 + \frac{.09}{12}\right]^{96}$$

$$= 5000\,(1.0075)^{96}$$

$$= 5000 \cdot 2.04892$$

$$= 10244.61$$

Intrest Formula Using Squeeze

$$\lim_{r \to .06} 1000\left(1 + \frac{r}{4}\right)^{40}$$

$$\lim_{r \to .06} -\left[1000\left(1 + \frac{r}{4}\right)^{40}\right] \leq \lim_{r \to .06} 1000\left(1 + \frac{r}{4}\right)^{40} \leq \lim_{r \to .06} 1000\left(1 + \frac{r}{4}\right)^{40}$$

$$-1814.02 \leq \lim_{r \to .06} 1000\left(1 + \frac{r}{4}\right)^{40} \leq 1814.02$$

$$\lim_{r \to .09} 5000\left(1 + \frac{r}{12}\right)^{96}$$