

Bell Work Thursday 12/21

Grab a calculator

- If you invest 10,000 with 7% interest rate compounded monthly, how long will it take until your balance is 25,000. t ?

$$A = P \left(1 + \frac{r}{K} \right)^{Kt} \quad \text{interest compounded } K \text{ times}$$

$$A = Pe^{rt} \quad \text{interest continuously}$$

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

$K=12$ $r=0.07$

$$25,000 = 10,000 \left(1 + \frac{0.07}{12} \right)^{12t}$$

Algebraically

$$\frac{25,000}{10,000} = \frac{10,000}{10,000} \left(1 + \frac{0.07}{12} \right)^{12t}$$

$$\log 2.5 = \log(1.00583)^{12t}$$

$$\frac{\log(2.5)}{12 \log(1.00583)} = \frac{12t \log(1.00583)}{12 \log(1.00583)}$$

$$13.13 = t$$

Calculator method

Menu---algebra---numerical solve