3. As follow we have annual rate (r) of 10% or 20% with initial debt (A­­­o) of 1 dollar.

The graph below show for one time per year that interest is applied the account at annual interest rate of 10%, the discrete model show slower increase than continuous model as the compounding rate increase.

The graph below show for one times per year that interest is applied the account at annual interest rate of 20%, the continuous model show a fast increase than discrete model as the compounding rate increase.

The graph below show for two times per year that interest is applied the account at annual interest rate of 10%, the discrete model show slower increase than continuous model as the compounding rate increase. However, the different between continuous model and discrete model is smaller than at one time per year that interest is applied to the account.

The graph below show for two times per year that interest is applied the account at annual interest rate of 20%, the discrete model show slower increase than continuous model as the compounding rate increase. However, the different between continuous model and discrete model is smaller than at one time per year that interest is applied to the account.

The graph below show for fourth times per year that interest is applied the account at annual interest rate of 10%, the discrete model show slower increase than continuous model as the compounding rate increase. However, the different between continuous model and discrete model is smaller than at two times per year that interest is applied to the account.

The graph below show for fourth times per year that interest is applied the account at annual interest rate of 20%, the discrete model show slower increase than continuous model as the compounding rate increase. However, the different between continuous model and discrete model is smaller than at two times per year that interest is applied to the account.

The graph below show for twelfth times per year that interest is applied the account at annual interest rate of 10%, the discrete model show slower increase than continuous model as the compounding rate increase. However, the different between continuous model and discrete model is smaller than at fourth times per year that interest is applied to the account.

The graph below show for two times per year that interest is applied the account at annual interest rate of 20%, the discrete model show slower increase than continuous model as the compounding rate increase. However, the different between continuous model and discrete model is smaller than at fourth times per year that interest is applied to the account.

We concluded that as the number of times per year that interest is applied to the account increase, the different between continuous model and discrete model slowly move closer to each other.

11. In this part, we know there is an initial balance (A­o) of 1 and an interest rate (r).

The graph below show in the early year the P-value increase traumatically, but the increase will slow down as year part because the P-value will pay off the interest rate and some of the initial balance. The P-value will always increase but the increase will decrease.

10. The equation (4) is useful, because it demonstrate the rate you need to pay at a certain time in order to pay off the debt.