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ECON Assignment 1

1. a)

**Interest Accumulation**
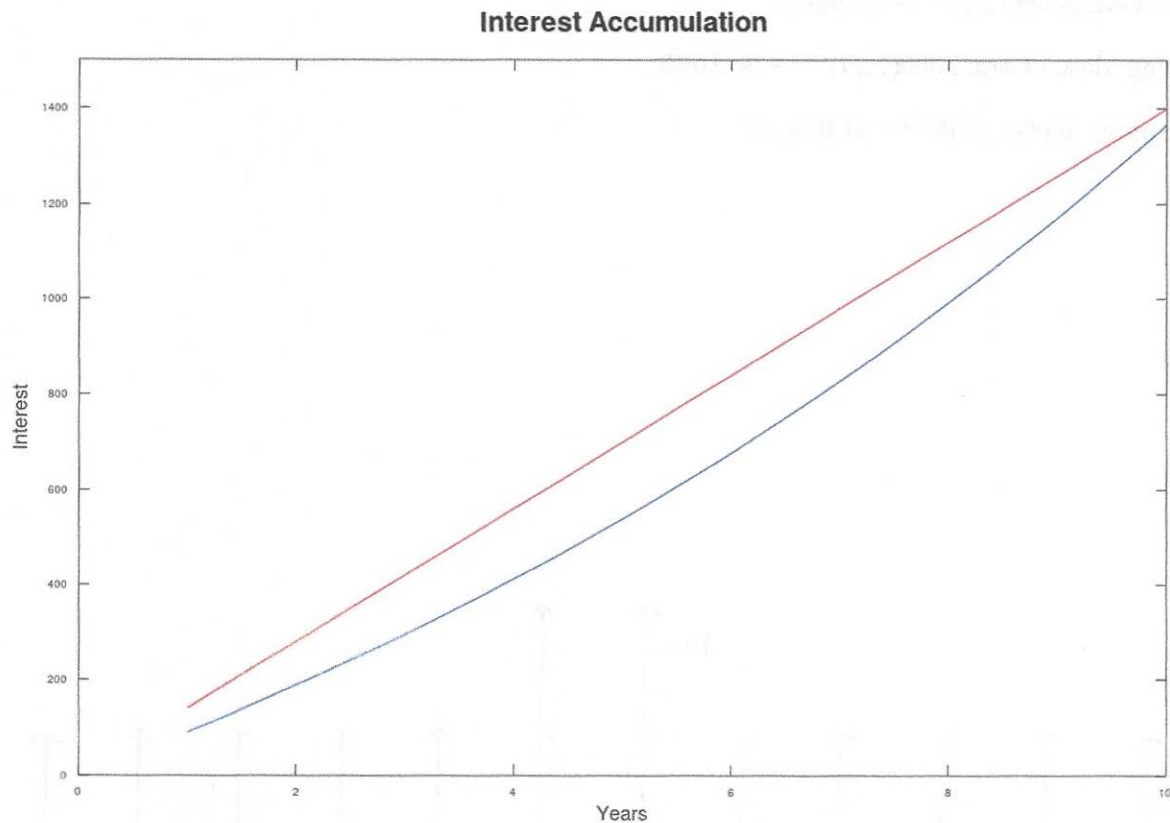


**Note:** the red plot is simple interest and the blue plot is compound interest

b) As seen above, the simple interest rate would generate more interest over a 5 year period. This makes it

better than the compound interest account over this timeframe

c) Using an online calculator, setting $140x = 1000(1.09)^x - 1000$, it was found that the compound eqn passed the simple equation at 10.48 years. However, since it is compounded annually, it would need to be 11 years until the compound deposit would be preferable.
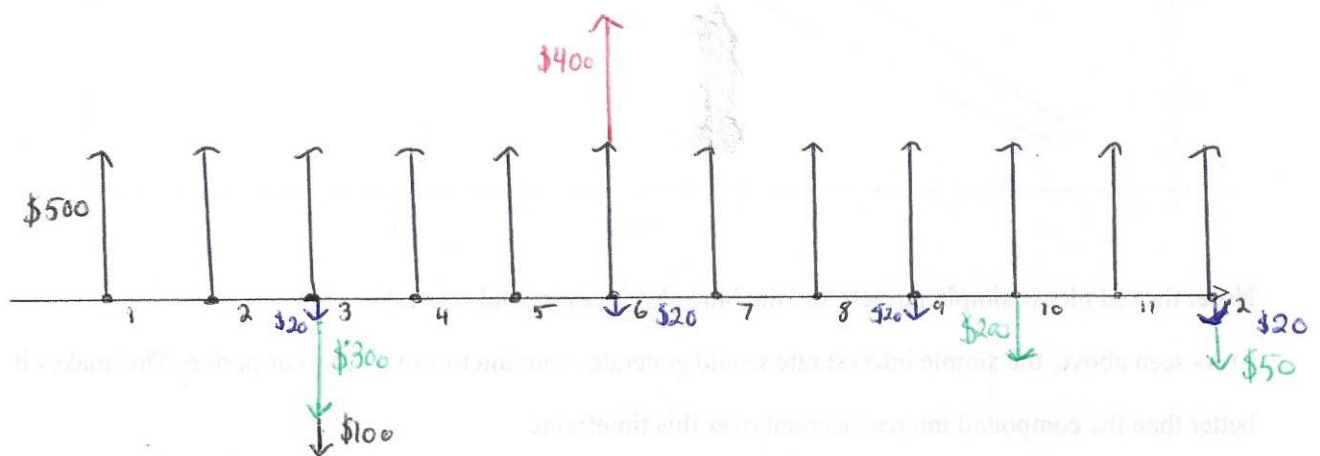
2. a) Menacing Master Card has the best deal

b)

Vicious Visa: $3000(1.28)^{52*4} = \$5.98E25$

Menacing Master Card: $3000(1.29)^{12*4} = \$6.10E8$

Evil Express: $3000(1.27)^{365*4} = \$1.07E155$

3.

4. P = 250 000; S = 25 000; N = 4+3 = 7

a)     $D_{sl}(n) = \dfrac{P - S}{N}$     $\therefore D_{sl}(n) = (250000 - 25000)/7 = \$32142.86/yr$

b) Book Value = 250000 - 4*(32142.86)

= $121428.56

5. a)     $d = 1 - \sqrt[n]{\dfrac{S}{P}}$

$d = 1 - \sqrt[3]{\dfrac{160000}{150000}}$

$= 1 - 0.873580464$

$= 0.126419535$

$= 12.64\%$

b) $BV_{db}(20) = 150000(1 - 0.126419535)^{20}$

$= \$10049.62$