

Name (print neatly): KEY Score: _____/20**Quiz 1: Thursday, January 22, 2014**

To receive full credit, show all work necessary to justify answers and all steps of solutions and derivations clearly, in logical sequence, using notation developed in class. Partial credit will be given only for significant progress toward a solution.

1. (4 pts) Suppose $a(t)$ is an accumulation function with effective rate of interest i . Then

(a) $a(0) = \underline{1}$

(b) $a(1) = \underline{1+i}$

2. (12 pts) An investment of \$1000 is made into a fund at time $t = 0$. The fund develops the following balances over the next 3 years.

t	$A(t)$
0	1000.00
1	1035.00
2	1076.40
3	1097.93

Find each of the following, showing your reasoning. Round each final answer to two decimal places.

$$\begin{aligned} \text{(a) } I_2 &= A_2 - A_1 \\ &= 1076.40 - 1035.00 \\ &= \underline{\underline{\$41.40}} \end{aligned}$$

$$\begin{aligned} \text{(b) } i_2 &= \frac{A_2 - A_1}{A_1} \\ &= \frac{41.40}{1035.00} \\ &= \underline{\underline{0.04}} \end{aligned}$$

(c) If \$300 is invested at time $t = 1$, under the same interest environment, find the accumulated value of the \$300 at time $t = 3$.

let K be that accumulated value. Then

$$\begin{aligned} \frac{K}{300} &= \frac{A(3)}{A(1)} \\ K &= \frac{300 A(3)}{A(1)} = \frac{300(1097.93)}{1035} = \underline{\underline{\$318.24}} \end{aligned}$$

3. (4 pts) Circle TRUE or FALSE for each of the following.

(a) TRUE or FALSE: For simple interest, the amount of interest earned during each period is constant.

(b) TRUE or FALSE: For simple interest, the effective rate of interest during each period is constant.