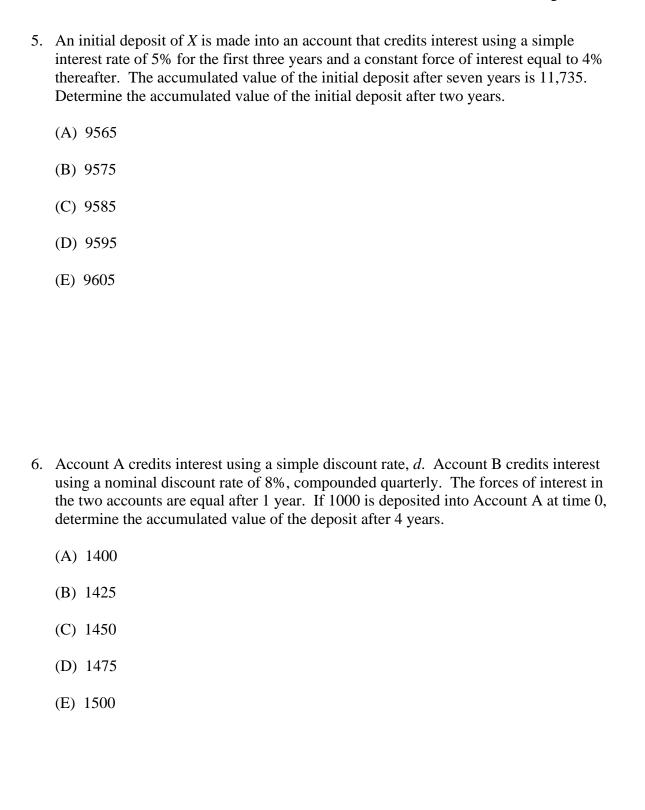
M	AP 4170	Name:
Те	st 1	Date: February 4, 2014
Sh	ow sufficient	work and clearly mark your answers. Each problem is worth 10 points.
1.	an interest ra deposits anot	, 2012, Kevin deposits 15,000 into an account that credits interest using te of $i$ , compounded monthly ( $i > 0$ ). On January 1, 2013, Kevin her 25,000 into the account. On January 1, 2014, the two deposits have to a total of 45,670. Determine $i$ .
	(A) 8.14%	
	(B) 8.75%	
	(C) 9.13%	
	(D) 9.42%	
	(E) 9.60%	
2.	David deposi	is 1000 into an account. After $4n$ years the value of the deposit is $16,000$ . Its $X$ into another account. After $3n$ years the value of David's deposit is a accounts earn the same nominal discount rate, compounded monthly.
	(A) 2950	
	(B) 3000	
	(C) 3050	
	(D) 3100	
	(E) 3150	

3. Determine which of the following equations represents the correct relationship between a nominal discount rate compounded semiannually and its equivalent nominal interest rate compounded quarterly.

(A) 
$$d^{(2)} = -2 \left[ \frac{1}{\sqrt{\left(1 + \frac{i^{(4)}}{4}\right)}} - 1 \right]$$

- (B)  $d^{(2)} = -2 \left[ \frac{1}{\sqrt[4]{\left(1 + \frac{i^{(4)}}{4}\right)}} 1 \right]$
- (C)  $d^{(2)} = -2 \left[ \frac{1}{\left(1 + \frac{i^{(4)}}{4}\right)^2} 1 \right]$
- (D)  $d^{(2)} = -2\left[\frac{1}{\left(1 + \frac{i^{(4)}}{4}\right)^4} 1\right]$
- (E) None of the above
- 4. Determine  $\frac{d}{dv}(d)$ , where d is the periodic effective discount rate that corresponds to the periodic discount factor, v.
  - (A) v
  - (B) -v
  - (C) 1
  - (D) -1
  - (E) None of the above



7. An account credits interest using  $\delta_t = 0.15\sqrt{t}$  for t > 0. Determine  $\frac{i_2}{d_3}$ (A) 0.85

(B) 0.90

(C) 0.95

(D) 1.00

(E) 1.05

- 8. An account credits interest using  $\delta_t = \frac{t}{4+2t^2}$  where t is the number of years after January 1, 2013. Determine the value on July 1, 2016, of a deposit of 1000 made on January 1, 2014.
  - (A) 1375
  - (B) 1400
  - (C) 1425
  - (D) 1450
  - (E) 1475

