

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Quiz name: Math IV Unit 2: Applications Review before Test

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1. The average price of a loaf of bread  $n$  years after 1950 is approximated by the sequence  $a_n = 0.04n + 0.14$ . Use the sequence to predict the price of a loaf of bread in 2001.
- (A) \$2.10
- (B) \$2.14
- (C) \$2.18
- (D) \$2.22
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2. In 1993, the average cost of a ticket on a privately-owned airline was \$107. This amount has increased by approximately \$75 yearly. How much should you expect to pay for a ticket on this airline in the year 2004?
- (A) \$857
- (B) \$932
- (C) \$1,007
- (D) \$1,082
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3. A large asteroid crashed into a moon of another planet, causing several boulders from the moon to be propelled into space toward the planet. Astronomers were able to measure the speed of one of the projectiles. This distance (in feet) that the projectile traveled each second, starting with the first second, was given by the arithmetic progression 18, 54, 90, 126, ... Find the distance that the projectile traveled in the 9th second.
- (A)  $a_n = 18 + 36(n-1)$   
 $a_9 = 306$  ft
- (B)  $a_n = 18 + 36(n-1)$   
 $a_{10} = 342$  ft
- (C)  $a_n = 54 + 36(n-1)$   
 $a_9 = 342$  ft
- (D)  $a_n = 54 + 36(n-1)$   
 $a_{10} = 378$  ft
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4. A woman made \$35,000 during the first year of her new job at city hall. Each year she received a 10% raise. Find her **total earnings** during the first **eight** years on the job.
- (A) \$38,888
  - (B) \$68,205
  - (C) \$199,337
  - (D) \$400,256
  - (E) \$412,820
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5. In a financial deal, you are promised \$700 the first day, and each day thereafter you will receive 65% of the previous day's amount. When one day's amount drops below \$1, you stop getting paid. What is the first day you would receive NO payment (i.e., first day it drops below \$1)? And what is your **TOTAL** income up until that day?
- (A) First Day No Payment: Day 16  
Sum of Days 1-15: \$1,996.88
  - (B) First Day No Payment: Day 17  
Sum of Days 1-16: \$1,997.97
  - (C) First Day No Payment: Day 17  
Sum of Days 1-17: \$1,998.68
  - (D) Never stops receiving payment.  
Infinite Sum: \$2,000.00