

NAME: \_\_\_\_\_

*A2.A.35: Determine the sum of the first  $n$  terms of an arithmetic or geometric series*

1. 010601b, P.I. A2.A.35

What is the value of  $\sum_{n=1}^5 (-2n + 100)$ ?

[A] 530    [B] 470    [C] 130    [D] 70

2. 060326b, P.I. A2.A.35

Evaluate:  $2 \sum_{n=1}^5 (2n - 1)$

3. 060421b, P.I. A2.A.35

The projected total annual profits, in dollars, for the Nutyme Clothing Company from 2002 to 2004 can be approximated by the model  $\sum_{n=0}^2 (13,567n + 294)$ , where  $n$  is the year and  $n = 0$  represents 2002. Use this model to find the company's projected total annual profits, in dollars, for the period 2002 to 2004.

4. 080418b, P.I. A2.A.35

A ball is dropped from a height of 8 feet and allowed to bounce. Each time the ball bounces, it bounces back to half its previous height. The vertical distance the ball travels,  $d$ , is given by the formula  $d = 8 + 16 \sum_{k=1}^n \left(\frac{1}{2}\right)^k$ , where  $n$  is the number of bounces. Based on this formula, what is the total vertical distance that the ball has traveled after four bounces?

[A] 22.0 ft                      [B] 23.0 ft  
[C] 15.0 ft                      [D] 8.9 ft

*A2.A.35: Determine the sum of the first  $n$  terms of an arithmetic or geometric series*

[1] B \_\_\_\_\_

[2] 50, and appropriate work is shown, such as  $2(1 + 3 + 5 + 7 + 9)$ .

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but  $(1 + 3 + 5 + 7 + 9)$  is not multiplied by 2, resulting in an answer of 25.

or [1] 50, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[2] incorrect procedure. \_\_\_\_\_

[2] 41,583, and appropriate work is shown.

[1] Appropriate work is shown, but one conceptual error or one computational error is made.

or [1] 41,583, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[3] incorrect procedure. \_\_\_\_\_

[4] B \_\_\_\_\_