

# Math 200 - Quiz 5

February 22, 2012

Name key

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Compute the following sum:

$$13 + 19 + 25 + \dots + 1219 + 1225$$

How many  
Terms?

$$N^{\text{th}} \text{ term} = 6N + 7$$

$$1225 = 6N + 7$$

$$1218 = 6N$$

$$203 = N$$

203 Terms

$$\begin{array}{r} S = 13 + 19 + \dots + 1219 + 1225 \\ + S = 1225 + 1219 + \dots + 19 + 13 \\ \hline \end{array}$$

$$2S = 1238 \times 203$$

$$S = \frac{1238 \times 203}{2} = \boxed{125,657}$$

2. (1 point) If  $A = \{1, 2, 3, 4, 5, 6\}$  and  $B = \{10, 20, 30, 40, 50, 60, 70\}$ , determine  $n(A \times B)$ .

$$n(A) = 6$$

$$n(B) = 7$$

$$n(A \times B) = 6 \cdot 7 = \boxed{42}$$

3. (1 point) Let  $X = \{1, 3, 5\}$  and  $Y = \{a, b, c\}$ . List the elements of  $X \times Y$ .

$$X \times Y = \{ (1, a), (1, b), (1, c), (3, a), (3, b), (3, c), (5, a), (5, b), (5, c) \}$$