

Math 200 - Quiz 2

February 3, 2010

Name key

Score _____

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

1. (1 point) For each sequence, find three terms that continue a possible pattern.

(a) 3, 6, 12, 24, 48, ... IT LOOKS LIKE WE'RE MULTIPLYING BY 2

$$\boxed{96, 192, 384}$$

(b) 2, 6, 10, 14, 18, 22, ... IT LOOKS LIKE WE'RE ADDING 4

$$\boxed{26, 30, 34}$$

2. (1 point) Find a formula for the n th term of the sequence 5, 13, 21, 29, 37, ...

$$\begin{array}{cccc} \vee & \vee & \vee & \vee \\ 8 & 8 & 8 & 8 \end{array}$$

COUNTING BY 8'S, BUT 1ST TERM IS SHIFTED -3.

$$\boxed{N^{TH} \text{ TERM} = 8N - 3}$$

3. (1 point) Find the 317th term of the sequence in problem 2.

$$\begin{aligned} 317^{TH} \text{ TERM} &= 8(317) - 3 \\ &= \boxed{2533} \end{aligned}$$

4. (2 points) Find the sum: $3 + 10 + 17 + \dots + 1634 + 1641$

$$N^{TH} \text{ TERM} = 7N - 4$$

$$1641 = 7N - 4 \Rightarrow 1645 = 7N \Rightarrow N = 235 \rightarrow$$

$$\begin{aligned} &3 + 10 + \dots + 1634 + 1641 \\ &1641 + 1634 + \dots + 10 + 3 \\ &\hline &235 \text{ groups of } 1644 \end{aligned}$$

$$\boxed{\text{Sum} = \frac{1}{2} (235)(1644) = 193,170}$$