Name: Key

10.1 Practice

Find the specified term of each sequence.

1. ninth term, $a_n = \frac{n^2 - n}{4n - 18}$

$a_9 = \frac{(9)^2 - (9)}{4(9) - 18}$

4

2. fourth term $a_n = -1^n + 5$

$a_4 = -1^4 + 5$

$= -1 + 5$

4

Determine whether each sequence is *convergent* or *divergent*.

3. 20, 18, 14, 8, .0 -10 -22

-2 -4 -6 -8 -10 -12

Not approaching 1 number

so divergent

4. $a_n = \frac{(-1)^n}{2n - 1}$

Put in y= on calc

approaching 0 → convergent

Find the indicated sum for each sequence.

5. seventh partial sum of 13, 22, 31, 40, 49 58 67

1 2 3 4 5 6 7

+9 +9 +9

Add them 13+22+31+40+49+58+67

286

6. S_4 of $a_n = 2(3.5)^n$

$a_1 = 2(3.5)^1 = 7$

$a_2 = 2(3.5)^2 = 24.5$

$a_3 = 2(3.5)^3 = 85.75$

$a_4 = 2(3.5)^4 = 300.125$

ADD

417.375

Find each sum.

7. $\sum_{n=3}^{5}(n^2 - 2^n)$

when n=3 when n=4 when n=5

$[(3)^2 - 2^3] + [(4)^2 - 2^4] + [(5)^2 - 2^5]$

1 + 0 - 7

-6

8. $\sum_{n=0}^{3}(2n - 3)$

0 1 2 3

-3 + -1 + 1 + 3

0

Write each series in sigma notation. The lower bound is given. Tough! Let's do it!

9. $3 + 6 + 9 + 12 + 15;\ n = 1$

$\sum 3+3n$, $n=1$

$\sum_{n=1}^{5} 3n$

see! I tried!

10. $24 + 19 + 14 + \ldots + (-1);\ n = 0$

-5 -5 -5

$\sum_{n=0}^{5} 24 - 5n$

11. Kathryn started saving quarters in a jar. She began by putting two quarters in the jar the first day and then she increased the number of quarters she put in the jar by one additional quarter each successive day.

a. Use sigma notation to represent the total number of quarters Kathryn had after 10 days.

b. Find the sum represented in part **a**.

$\sum_{n=0}^{9} 2+n$ OR $\sum_{n=1}^{10} n+1$

65