

In-Class Problems 22 for Monday, April 23

These problems are from [Pre-Class Problems 22](#).

1. Find the first four terms of the sequence.

a. $a_n = \frac{n + 2}{4n - 1}$

b. $b_n = \sqrt{n^2 + 9}$

c. $c_n = \left(-\frac{3}{4}\right)^n$

d. $b_n = \frac{7}{10^n}$

e. $a_n = (-1)^{n+1} \frac{2^n}{n!}$

2. Find the following sums.

a. $\sum_{i=1}^5 (3i + 5)$

b. $\sum_{j=2}^4 (-3)^j$

c. $\sum_{k=3}^8 (k + 1)(k - 3)$

3. Determine if the following sequences are arithmetic. If the sequence is arithmetic, then find the common difference.

a. $9, 5, 1, -3, -7, \dots$

b. $1, 4, 7, 12, 17, \dots$

4. Write the first five terms of the arithmetic sequence $\{a_n\}$ with the given first term and common difference.

a. $a_1 = -5$ and $d = 8$

b. $a_1 = 6$ and $d = -3$

5. Find the n th term of the arithmetic sequence $\{b_n\}$ with $b_1 = 14$ and $d = 6$. Then find b_{25} .