

**HW: Sequences & Series Practice**

Rank your answers to the multiple choice like you will do on the midterm examination!

<p>1. Find the sum.</p> $\sum_{k=1}^3 \frac{1}{k^2 + 4}$ <p>A) <math>\frac{209}{520}</math>                  B) <math>\frac{1}{11}</math>                  C) 1                  D) <math>\frac{13}{12}</math>                  E) <math>\frac{12}{11}</math></p>
<p>2. Find a formula for <math>a_n</math> for the arithmetic sequence.  <math>a_3 = -13, a_6 = -31</math></p> <p>A) <math>a_n = -1 - 4n</math>                  B) <math>a_n = -9 - 4n</math>                  C) <math>a_n = 5 - 6n</math>                  D) <math>a_n = -13(1.5)^{n-1}</math>                  E) <math>a_n = -7 - 4n</math></p>
<p>3. Write the <math>n</math>th term of the arithmetic sequence as a function of <math>n</math>.  <math>a_1 = 6, a_{k+1} = a_k - 4</math></p> <p>A) <math>a_n = -14 - 8n</math>                  B) <math>a_n = 10 - 4n</math>                  C) <math>a_n = -6 - 8n</math>                  D) <math>a_n = 2 - 8(n-1)</math>                  E) <math>a_n = -2 - 6n</math></p>
<p>4. Find the indicated <math>n</math>th partial sum of the arithmetic sequence.  <math>2.8, 5.4, 8, 10.6, \dots, n = 95</math></p> <p>A) 12749                  B) 12122                  C) 11875                  D) 11874.8                  E) 11875.2</p>

<p>5. Determine whether the sequence is geometric. If so, find the common ratio.  <math>5, -10, 20, -40, \dots</math></p> <p>A) -2                  B) 5                  C) <math>-\frac{1}{2}</math>                  D) 2                  E) not geometric</p>
<p>6. Find the indicated term of the geometric sequence. Round to the nearest thousandth.  <math>a_1 = 2, r = 1.03, n = 11</math></p> <p>A) 12.300                  B) 2.768                  C) 2.688                  D) 2.852                  E) 2.060</p>
<p>7. Match the geometric sequence with its graph from the choices below.</p> <p><math>a_n = -3 \left(\frac{2}{5}\right)^{n-1}</math></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>A)</p> </div> <div style="text-align: center;"> <p>B)</p> </div> <div style="text-align: center;"> <p>C)</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>D)</p> </div> <div style="text-align: center;"> <p>E)</p> </div> </div>
<p>8. Do the following text book problems:                  p. 652/113      p. 661/87, 91      p. 671/103, 117</p>

**Answer Key**

1. A
2. C
3. B
4. C
5. A
6. C
7. E