Student: _____ **Date:** _____ **Time:** _____	**Instructor:** Fred Khoury **Course:** Math 2312-1000 Precalculus (Fall - 2015) **Book:** Lial: College Algebra and Trigonometry, 4e	**Assignment:** Quiz Sec 4.2

1. Find the common difference for the arithmetic sequence.

5, 8, 11, 14, ...

- A. 2.25
- B. 35
- C. 3
- D. 5

2. Write the first n terms of the given arithmetic sequence for the indicated value of n.

$a_1 = 8, d = 2, n = 6$

- A. 8, 9, 10, 11, 12, 13
- B. 8, 10, 12, 14, 16, 19
- C. 0, 8, 10, 12, 14, 16
- D. 8, 10, 12, 14, 16, 18

3. Write the first n terms of the given arithmetic sequence for the indicated value of n.

$a_1 = 1 - \sqrt{7}, a_2 = 1, n = 4$

- A. $1 - \sqrt{7}, 1, 1 + \sqrt{7}, 1 + 2\sqrt{7}$
- B. $1 - \sqrt{7}, 2 - \sqrt{7}, 3 - \sqrt{7}, 4 - \sqrt{7}$
- C. $0, -1 - \sqrt{7}, 2 - 2\sqrt{7}, 3 - 3\sqrt{7}$
- D. $0, 1 - \sqrt{7}, 1, 1 + \sqrt{7}$

4. Find a_n and a_6 for the following arithmetic sequence.

$a_{10} = 40, a_{12} = 134$

- A. $a_n = -383 + 47(n - 1), a_6 = -148$
- B. $a_n = -383 + 47(n - 1), a_6 = -665$
- C. $a_n = -383 + 47(n - 1), a_6 = -101$
- D. $a_n = -383 - 47(n - 1), a_6 = -2075$

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5. Find the sum of the first n terms of the following arithmetic sequence.

$a_1 = -5, d = 2; n = 5$

- A. -25
- B. -5
- C. -6
- D. 5

6. Evaluate the sum.

$$\sum_{k=1}^{19} (-7 - 8k)$$

- A. 11,469
- B. $-1{,}494$
- C. 11,621
- D. $-1{,}653$

7. Find the nth term of the geometric sequence.

$a = 1664, r = \frac{1}{4}, n = 2$

- A. $a_2 = \frac{1}{416}$
- B. $a_2 = -\frac{1}{416}$
- C. $a_2 = -416$
- D. $a_2 = 416$

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8. Find the nth term of the geometric sequence.

$\frac{1}{4}, \frac{1}{12}, \frac{1}{36}, \ldots; n = 6$

A. $\frac{1}{72}$

B. $\frac{1}{972}$

C. $\frac{1}{243}$

D. $\frac{1}{2{,}916}$

9. Find a general term a_n for the geometric sequence.

$a_1 = 3, r = \frac{3}{2}$

A. $a_n = 3 + -\frac{3}{2}(n-1)$

B. $a_n = 3^{n-1} + -\frac{3}{2}$

C. $a_n = 3 + \frac{1}{2}(n-1)$

D. $a_n = 3 \cdot \left(\frac{3}{2}\right)^{n-1}$

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10. Find a general term a_n for the geometric sequence.

$a_4 = -\frac{1}{8}, a_{11} = \frac{1}{131{,}072}$

A. $a_n = 8\left(-\frac{1}{4}\right)^{n-1}$

B. $a_n = 8\left(\frac{1}{4}\right)^{n-1}$

C. $a_n = 6\left(-\frac{1}{6}\right)^{n-1}$

D. $a_n = \frac{1}{8}(-4)^{n-1}$

11. Find a general term a_n for the geometric sequence.

$2, -\frac{1}{2}, \frac{1}{8}, -\frac{1}{32}, \frac{1}{128}\ldots$

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

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

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

D. $a_n = 6\left(-\frac{1}{6}\right)^{n-1}$

12. Find the first term and the common ratio for the geometric sequence. Round approximations to the nearest hundredth.

$a_2 = 10, a_4 = 250$

A. $a_1 = 2, r = 5$

B. $a_1 = 2, r = 0.20$

C. $a_1 = 10, r = 5$

D. $a_1 = 250, r = 0.20$

13. Use the formula for S_n to find the sum of the first five terms of the geometric sequence. Round your answer to the nearest hundredth.

$a_1 = 6.147, r = 3.428$

A. 1,195.91

B. 347.07

C. 194.55

D. -847.05

14. Find the sum of the geometric series.

$$\sum_{k=1}^{5} \frac{1}{3}(4)^k$$

A. $\frac{1313}{3}$

B. $\frac{1352}{3}$

C. $\frac{1364}{3}$

D. $\frac{1421}{3}$

15. Find the common ratio r for the given infinite geometric sequence.

$3, \frac{3}{4}, \frac{3}{16}, \frac{3}{64}, \frac{3}{256}, \ldots$

A. $\frac{1}{10}$

B. 10

C. 4

D. $\frac{1}{4}$

16. Evaluate the series if it converges. If the series does not converge, so state.

$$\sum_{k=1}^{\infty}\left(\frac{9}{10}\right)^{k}$$

A. 10

B. -9

C. 9

D. Does not converge.

17. Evaluate the series if it converges. If the series does not converge, so state.

$$\sum_{i=1}^{\infty}9\left(\frac{5}{3}\right)^{i-1}$$

A. $-\frac{27}{2}$

B. $\frac{27}{2}$

C. $\frac{45}{2}$

D. Does not converge.