

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 18a: Math IBSL - Standard 18 - Arithmetic and Geometric Sequences

5 points

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1 For the following sequences, determine whether they are geometric and if so, find the term indicated.

a 9, 27, 81, ...  $u_6$

d -4, 6, -9, ...  $u_8$

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3 Write the first five terms of a geometric sequence in which the sixth term is 64.

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1 If a geometric sequence has  $u_5 = 40$  and  $u_{10} = 303.75$ , find the value of  $u_{15}$ .

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2 For a geometric sequence that has  $r = -\frac{4}{5}$  and  $u_6 = -1\,280$ , find the 20th term.

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- 3 If 16,  $x + 2$ , 1 are the first three terms of a geometric sequence, find all possible values of  $x$ .

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- 4 Find the number of terms in the geometric sequence

6, 12, 24, ..., 1536

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- 7 An old legend states that a peasant won a reward from a king. The peasant asked to be paid in rice; one grain on the first square of a chessboard, two grains on the second, four on the third square, and so on.

- a How many grains of rice would be on the 30th square?
- b Which square would contain exactly 512 grains of rice?