

I. Complete the chart below. Must show work for credit!

Given Sequence	Determine If Geometric	Common Ratio r	Next Three Terms
1.) 6, 12, 24, 72, ...	No	$\rightarrow r = N/A$	\rightarrow X
2.) 18, -54, 162, ...	Yes	$\rightarrow r = -3$	\rightarrow $a_4 = -486$ $a_5 = 1458$ $a_6 = -4374$
3.) 256, 128, 64, 32, ...	Yes	$\rightarrow r = \frac{1}{2} \text{ or } .5$	\rightarrow $a_5 = 16$ $a_6 = 8$ $a_7 = 4$
4.) $7, -\frac{14}{3}, \frac{28}{9}, -\frac{56}{27}, \dots$	Yes	$\rightarrow r = -\frac{2}{3}$	\rightarrow $a_5 = \frac{112}{81}$ $a_6 = -\frac{224}{243}$ $a_7 = \frac{448}{729}$

II. Find the indicated term of each geometric sequence. Must show work for credit!

5.) $a_1 = 5$ and $r = 2$; find the 6 th term $a_6 = 160$	6.) $a_1 = 53,248$ and $r = -\frac{1}{4}$; find the 10 th term $a_{10} = -\frac{13}{64}$	7.) Find a_8 for sequence -12, -6, -3, ... $a_8 = -\frac{3}{32}$	8.) Find a_7 for sequence 20, 180, 1620, ... $a_7 = 10628820$
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III. Considering all given sequences are geometric – Find what is asked. SHOW WORK!!!

9.) The 10 th term of the sequence is -50,388,480 and the common ratio is 6. What is the first term? $a_1 = -5$	10.) What is the common ratio for the sequence where the first term is 78 and the 7 th term is 1.21875? $r = .5 \text{ or } \frac{1}{2}$	11.) Which term of the sequence 2, 14, 98, ... is 4,802? 5 th term
12.) The fourth term is 16 and the eighth term is 1. What is value of r ? $r = \frac{1}{2}$	13.) The first term is 2 and the second term is 10. Is 781,250 a term of the given sequence? Yes – it's the 9 th term.	14.) The fifth term is -98,304 and the third term is -1,536. What is the n th term? $a_n = -24(8)^{n-1}$
15.) The sixth term is 3 and the common ratio is 2. What is a_{12} ? $a_{12} = 192$	16.) What are the four geometric means between 1 and 7,776? 6, 36, 216, 1296	17.) The ninth term is 32,805 and the twelfth term is 885,735. What is the eighteenth term? $a_{18} = 645700815$
18.) What are the three geometric means between 4 and 64? 8, 16, 32	19.) If $a_1 = -4$ and $r = 3.2$, then is -0.038147 a part of the sequence? No	20.) The eighth term is 49,152 and the first term is 3. What is the seventh term? $a_7 = 12288$