6C

4. $m, 13, 3m-6$

$u_1 = m$

$u_2 = 13$

$u_3 = 3m-6$

$13 = m + d$

$13 - d = m$

$u_2 + d = u_3 \longrightarrow 13 + d = 3m - 6$

$13 + d = 3m - 6$

$3m - d = 19$

$3m - 6 = m + 2d$

$2m - 6 = 2d$

$m - 3 = d$

$m + m - 3 = 13$

$2m = 16$

$m = 8$

$13 - m = 3m - 6 - 13$

Cornell Notes	Topic/Objective: 6.3 Geometric Sequences	Name:
AVID		Class/Period: 4
		Date: 11/17/17

Essential Question: What makes a sequence geometric?

Questions:	Notes:
	In a <u>geometric sequence</u>, each term can be obtained by multiplying the previous term by a constant value. This value is called the <u>common ratio</u>, r.
	• r can be positive, negative, fraction
	<u>Ex)</u> $1, 5, 25, 125, \ldots$ $u_1 = 1$ and $r = 5$
	<u>Ex)</u> $K, K^2, K^3, K^4, \ldots$ $u_1 = K$ and $r = K$
	FOR ANY GEOMETRIC SEQUENCE $u_{n+1} = (u_n)r$ YOU CAN FIND ANY TERM OF THE SEQUENCE BY MULTIPLYING THE PREVIOUS TERM by r.
	FOR ANY GEO. SEQUENCE u_1 = first term $u_2 = u_1 \times r$ $u_3 = u_2 \times r = (u_1 \times r) \times r = u_1 \times r^2$ $u_4 = u_3 \times r = (u_1 \times r^2) \times r$ $\vdots$ $u_n = u_1 \times r^{n-1}$
	General Formula $u_n = u_1(r^{n-1})$ for nth term

Questions:	Notes:

Ex) FIND THE 9th term of

$1, 4, 16, 64, \ldots$

$u_1 = 1 \quad , r = 4$

$u_n = u_1 (r^{n-1})$

$u_9 = (1 \times 4^{9-1}) = 1 \cdot 4^8 = 65,536$

Ex) IN A GEO SEQUENCE, $u_1 = 864$ and $u_4 = 256$

FIND THE COMMON RATIO r

$u_4 = u_1 r^{n-1} = u_1 r^3$

$\frac{256}{864} = \frac{864}{864} r^3$

$\sqrt[3]{\frac{256}{864}} = r = \frac{2}{3}$

USING A CALCULATOR

For the geo sequence $5, 15, 45, \ldots$

Find the least value of n for which the nth term is greater than 50,000.

at $n = 10$

HW 6D p. 168 #1

6E p. 169 #1-3