

Algebra 2 Weds. 2-6-13

CLASS NOTES

9. Find 6<sup>th</sup> term of geometric sequence

$$N=6$$

$$a_N = a_1 r^{(N-1)}$$

$$a_2 = 4 \quad a_5 = 108$$

Find  $r$

$$\frac{108}{4} = \frac{4 r^{(4-1)}}{4}$$

$$27 = r^3$$

$$r = 3$$

$a_1$

$$a_5 = a_1 r^{(N-1)}$$

$$\frac{108}{81} = \frac{a_1 (3)^4}{81}$$

$$\frac{4}{3} = \frac{12}{9} = a_1$$

$$a_6 = a_1 (r)^{N-1}$$

$$a_6 = \left(\frac{4}{3}\right) (3)^5$$

$$a_6 = \frac{4}{3} \cdot \frac{243}{1}$$

$$a_6 = 324$$

$$\textcircled{15} \quad \sum_{k=1}^5 (-3)^{k-1}$$

$$1 + (-3) + 9 + (-27) + 81 = \boxed{61}$$

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