Int 3MA C10 DDAY #2 Sequences & Series **Name:_____ Period ____Group #____**

SHOW ALL WORK USING ALGEBRAIC METHODS

1. Find the sum algebraically $\sum_{q=7}^{20}(18(1.15)^{q-1})$

2. Find the sum of the sequence:
$-\frac{1}{2}+\frac{2}{5}-\frac{8}{25}-\ldots$

3. Find n if $S_n=-1196$ for $\sum_{k=1}^{n}(8-5k)$

4. Given the series $2500+2250+2025+\ldots$ find n if $a_n=45.62$

5. Find a_n algebraically for the arithmetic sequence if $a_9=314$, $a_{17}=466$

6. Find the sum of the first 30 terms of $23+35+47+\ldots$

7. Find the sum: $-31+11+53+\ldots+977$

8. Evaluate algebraically
$\sum_{n=4}^{10}(5n-3)$

9. Prove by induction: $-83+-71+-59+...+(12n-95)=n(6n-89)$

10. Calculate the angle B of ΔABC given $a=12,\ b=18,\ c=10$

11. Solve for all angles within $[0,2\pi]$. Show work.

$\tan\theta=-\sqrt{3}$

12. Solve all roots of $y=x^3+3x^2-9x+5$

13. Tire pressure (pounds force per square inch (psi)) is sinusoidal. Three hours into the day, the tire pressure reached its lowest value at 3 psi. Five hours later it reaches its highest value of 4.2 psi. Sketch a graph and then write the function.