

## Pre-Calculus Homework #22 – Answer Key

- 1) Arithmetic  $A_n = -262 + 19n$      $37^{th} = 441$     1258 is the  $80^{th}$  term
- 2)  $\frac{-15}{2}$
- 3) \$29,640
- 4)  $\frac{2876335}{2048}$
- 5) 48.39999 feet
- 6) Alternating harmonic series and it converges     $\frac{-1627}{5040}$      $-.32282$
- 7) 3.07025
- 8) E, B, G#
- 9) .6688
- 10) Quadratic  $S = \sum_{n=1}^{\infty} (n+12)^2$     19,890
- 11) Harmonic series and it diverges     $\frac{274489}{240856}$     1.13964
- 12) 3.17862
- 13) A, E, C#
- 14) .6768
- 15) Cubic  $S = \sum_{n=1}^{\infty} (n+4)^3$     142,784
- 16) 10 years: 3 record-breaking years expected    20 years: 4 record-breaking years expected
- 17) Alternating harmonic sequence and the series converges     $\sum_{n=0}^{\infty} \frac{(-1)^n}{4n+1}$      $\frac{97846277}{111035925}$     .88121
- 18) B, F#, D#
- 19) Harmonic sequence and the series diverges     $\sum_{n=1}^{\infty} \frac{1}{3n-1}$      $\frac{451773911}{363210848}$     1.24383
- 20) 12 jeeps