Calculus II - Math 1220
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Name:⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Your first homework is a review of necessary algebra and trigonometry skills for success
in this course. You may use any reference to refresh your memory. You must write
mathematically correct and will be graded on your writing. Very little partial credit will
be given on this homework. **This homework should represent your best work!**

**If you do not earn close to 100% on this homework due to any reason, such as, not
knowing the material or not having time or care to refresh your memory, you should
drop this course.**

1. Convert the given point from rectangular coordinates to polar coordinates or vice-versa.

(a) $P = (x, y) = (-\frac{5}{2}, \frac{5\sqrt{3}}{2})$ Give **exact** values.

(b) $Q = (r, \theta) = (-2, \frac{7\pi}{6})$ Give **exact** values.

2.   Evaluate the following sums.

(a) $-2.5 - 1 + 0.5 + \cdots + 125$ Hint: This is an arithmetic series.

(b) $100 - 50 + 25 - 12.5 + \cdots$ Hint: This is an infinite geometric series.

3.   Solve $\log_2 x + \log_2(-4x + 12) = 3$.   Hint: Checking the potential solutions is part of the solution.

4.   Solve $36\, e^{5-z} - 6^{2z} = 0$.   Hint: Write in the form $a^p = b^q$ and then take a logarithm of both sides.