

Math 34A Midterm 1 Review

Main topics:

0. Basic stuff.
 - Solve for x .
 - Solve for x and y .
 - Pythagorean theorem.
 - Formulas for area, volume, surface area, etc.
1. Inverse function.
2. Percentage error.
3. Summation notation.
4. Limit.
5. Word problems. (e.g. express-in-terms-of problems)

****MAKE SURE YOU DO ALL THE HOMEWORK. A LOT OF THE PROBLEMS ON THE MIDTERM ARE FROM THE HOMEWORK WITH SLIGHT MODIFICATION.****

Problems.

1. Inverse function:

a) Find the inverse function of $f(x) = -4x + 7$ and $f^{-1}(3)$.

b) Find the inverse function of $f(x) = 2x^3$ and $f^{-1}(-2)$.

2. Percentage error:

a) What is the formula to compute percentage error?

b) You have \$25 in your pocket but you think you have \$30. What is the percentage error?

3. Summation notation:

a) Write out the following summations as a series of terms added together.

i. $\sum_{n=1}^5 2^n$

ii. $\sum_{n=-1}^4 (x_n)^2$

b) Write the average of the numbers $a_1, a_2, \dots, a_{1000}$ using summation notation.

4. Limit:

a) $\lim_{x \rightarrow 4} (x^2 + 1)$

b) $\lim_{x \rightarrow \infty} \frac{1}{x}$

c) $\lim_{x \rightarrow \infty} \frac{-3x+7}{8x-9}$

d) $\lim_{x \rightarrow 1} \frac{-3x+7}{8x-9}$