Math 172 Prerequisite Worksheet **Name:**_____

Due: Thursday, January 17, 2019

Show work and justify answers. Little or no work may receive little or no credit.
You are encouraged to get help from your instructor or the MLC if needed.

ALGEBRA

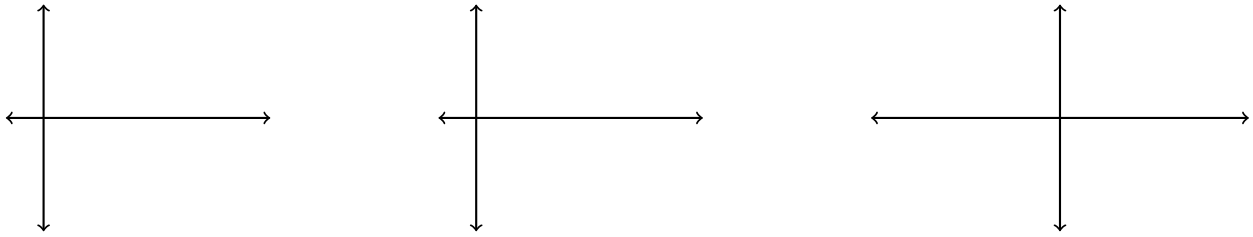
1. (2 pts) Solve for x: $x^2 + 4x + 9 = 6$

2. (2 pts) Solve for x: $\dfrac{8}{x} - 2 = x$

TRIG - Review sections 1.4 and 1.5 in your textbook to answer questions 3-5.

3. (6 pts) Sketch a graph for each. Clearly label the scale on the axes and provide appropriate features.

   (a) $y = \sin x$ (b) $y = \cos 2x$ (c) $y = \arctan x$



4. (5 pts) Evaluate exactly - no calculators.

   (a) $\cos(\pi/3)$ (b) $\cos(4\pi/3)$ (c) $\sin(5\pi/6)$ (d) $\tan(\pi/4)$ (e) $\arctan(1)$

5. (4 pts) Use an appropriate triangle to simplify the expression so that no trigonometric functions remain.

$$\tan(\arccos x)$$

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6. (6 pts) Differentiate.

   (a) $f(x) = x^{5/3} \ln x$ (b) $g(t) = \arctan(1 + 2t)$

7. (12 pts) Evaluate. Appropriate notation is required. Show all work.

(a) $\lim_{x \to -1} \dfrac{x^2 - 1}{x + 1}$

(b) $\lim_{x \to \infty} \dfrac{3x}{\ln(e^x + 2)}$

(c) $\displaystyle\int \frac{\sqrt{x} - 4}{x}\, dx$

(d) $\displaystyle\int_{\pi/6}^{\pi/2} \sin(2x)\, dx$

8. (3 pts) Answer the following questions using the M172 main course webpage:

(a) What are the dates and times of the three common hour exams?

(b) Is the final exam at the same time as the common hour exams? YES NO.
State the date/time of the final:

(c) Can you use a calculator (or other electronic device) during a M172 exam? YES NO.