

## MATH 1A – QUIZ 1

PEYAM RYAN TABRIZIAN

Name: \_\_\_\_\_

**Instructions:** You have 10 minutes to take this quiz, for a total of 10 points. **Show your work, unless otherwise specified and try to box your final answer whenever you can!** Good luck, and may  $\pi m$  be with you!

(1) (3 points) Find the domain of  $f(x) = \cos\left(\frac{1}{x}\right)\sqrt{(x-3)^2 - 4}$

(2) (2 points) Find the range of  $f(x) = 3 \sin(x) + 2$ . Here you do **NOT** have to show any work.

(TURN PAGE!!!)

---

Date: Friday, September 6th, 2013.

- (3) (2 points) Find  $f \circ f$  (f composed with f), where  $f(x) = \frac{1}{x+1}$ . Write your answer in the form of a fraction, i.e.  $\frac{ax+b}{cx+d}$ , where  $a, b, c, d$  are integers.

- (4) (3 points) Explain **in words** how to obtain the graph of  $f(x) = 2\sin(-x + 3) + 4$  from the graph of  $y = \sin(x)$ . You do **not** have to draw any graphs!

**Note:** The following vocabulary may be useful: the resulting graph, Stretch/Compress horizontally/vertically by a factor of  $\dots$ , shift up/down/left/right  $\dots$  units, Flip across the x/y-axis.

Answer: First we start with the graph of  $y = \sin(x)$ , and then we: