Grading and remarks for Lab 2

1 For part (a) I gave 1 point per graph. I gave 2/3 to people who plotted just one graph without saying that the circle graphed represents all the three particles. For part (b), (c) and (d) I gave 1/1 for correct and 0/1 for incorrect. In part (e) each velocity is worth 1 point. I took away half point for algebra mistakes.

Please review properties of fraction (if I divide by a/b, it's the same as multiplying by b/a). Also, review the formula for the distance in the plane: if I have $A = (x_A, y_A)$ and $B = (x_b, y_B)$, then we have the following formula for the distance

$$d(A, B) = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} \tag{1}$$

I did not take away points for missing units, but please note that it is important to become confident with those.

2 For both (a) and (b) I gave 1/1 for correct and 0/1 for incorrect. Please note that sine and cosine take values in $[-1, 1]$! Also, when you use the calculator make sure that you use parentheses when needed! For a calculator if you type a/b/c, you will not get the same answer as if you type a/(b/c).

Please review the basic properties of trig functions. There was no need to use the calculator in this exercise. In part (a) the answer is always 0, so I did not accept any approximation coming from the calculator, since 0 is 0 and not any other tiny number. Try to think carefully before just plugging in values in the calculator.

3 For part (a) I gave 1 point for a fully correct answer, 0 otherwise. For (b) through (e) I gave 1/2 if the result was coming from just plugging in values (e.g. 7.2 and 7.4 for the limit as x goes to 7.3) and I gave 2/2 just when a discussion involving either the properties of the Gauss floor function (it is continuous away from the integer numbers) or the concept of left and right limit and their comparison. I also gave 1/2 if the answer is correct and some work is shown, but no proper explanation is given. I gave 0 for correct answers without any attempt of work!

Please review the concept of limit and be aware that plugging is some values can give you a guess for the limit, but does not provide any explanation at all why the limit should be that one! Even $f(6.9999999999999999999999)$ cannot say anything relevant about $\lim_{x\to 7} f(x)$!!!

4 For each part I gave 0.5 points for correct domain of f, 0.5 for correct range of f and 1 point for correct inverse of f. I took away 0.5 points to people who had $D(f) \neq R(f^{-1})$ or $R(f) \neq D(f^{-1})$. Indeed, I explicitly wrote in the exercise that these two equalities always hold. Please be careful when you read an exercise!