Math120U, Quiz 7, 6/3/2004

Name _____ **Student number** _____

No notes allowed though you may use a non-graphical calculator. ***15 minutes for the quiz.***

1. Given a parametric curve describing the movement of a particle by the equations

$$\begin{cases} x = x(t) = t - 1 \\ y = y(t) = 4 - 2t \end{cases}$$

for $t \geq 0$. Here the time parameter t is in minutes while x and y are in meters.

(a) Find the speed of this particle in meters per minute. Leave the answer in the exact form. Do not approximate it. [5 pts]

(b) Find the function $y = f(x)$ whose graph gives this parametric curve. [5 pts]

2. Given a parametric equation for a circular movement

$$\begin{cases} x = x(t) = 3\cos(2t) \\ y = y(t) = 3\sin(2t) \end{cases}$$

for $t \geq 0$. Here the time parameter t is in minutes while x and y are in meters and the angle is always measured in radians. Find the starting location of this movement, its angular speed in radians per minute and its linear speed in meters per minute. [2+4+4 pts]