KFUPM – Department of Mathematics & Statistics
MATH201 – Term 171
Quiz **1A** (Duration: 25 Minutes)

Name: _____ ID #: _____

Question 1: Consider the parametric curve $\boldsymbol{C}$: $x = 1 + \sin 2\theta\,,\ y = 2\cos 2\theta\,,\quad -\frac{\pi}{2} \le \theta \le \pi$.

a) Eliminate the parameter to find a Cartesian equation of the curve
b) Sketch the curve and indicate with an arrow the direction in which the curve is traced as the parameter increases.

a)

b)

Question 2: Consider the parametric curve $\boldsymbol{C}$: $x = \sqrt{t},\ y = t^2 - t$.

a) Find an equation of the tangent to the curve $\boldsymbol{C}$ at the point (1, 0). Find the point(s) where the tangent is vertical or horizontal.
b) Find the area of the region enclosed by the curve $\boldsymbol{C}$ and the x-axis

a)

b)