

MA 2320: Quiz 8

Name: _____

1. Compute the following integrals:

(a) $\int \sin^3(3x) \cos^{1/2}(3x) dx$

(b) $\int \frac{1}{\sqrt{1+x^2}} dx$

1 Polar Coordinates

2. Graph the following parametric equations.

(a) $r = 3$

(b) $r = 4 \sin(\theta)$

(c) $r = \sin(2\theta)$

(d) $r = 1 + 2 \sin(\theta)$

3. For the following find the equation of the tangent line at the given point.

(a) $r = 3$ at $P = (x_0, y_0) = (\frac{3}{\sqrt{2}}, \frac{-3}{\sqrt{2}})$

(b) $r = 4 \sin(\theta)$ at $\theta = \pi/4$

(c) $r = \sin(2\theta)$ at $\theta = \pi/2$

(d) $r = 1 + 2 \sin(\theta)$ at $\theta = \pi/3$

2 Conic Sections

4. Graph the given conic sections.

(a) $x^2 + \frac{y^2}{4} = 1$

(b) $x^2 - \frac{y^2}{4} = 1$

(c) $x + \frac{y^2}{4} = 1$

(d) $x^2 + 4y^2 = 1$

(e) $(x-1)^2 - \frac{y^2}{4} = 1$