

Precalculus Final Exam Version 1

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1. (10) Convert $x^2 + y^2 = 4x$ into polar form.

2. (10) Convert $r = 2 \cos \theta$ to rectangular form.

3. (10) Draw a graph of $r = 2$.

4. (30) Solving the following triangles.

(a) $a = 2$, $b = 3$, $c = 4$. Find A , B , C .

(b) $a = 2$, $b = 3$, $C = \frac{\pi}{3}$. Find c , A , B .

5. (10) Find the magnitude of the vector $\mathbf{u} = -3\mathbf{i} + 4\mathbf{j}$.

6. (10) Change the polar coordinates $(5, \frac{2\pi}{3})$ into rectangular coordinates.

7. (20) Suppose $\mathbf{u} + \mathbf{v} + \mathbf{w} = \mathbf{0}$, $\mathbf{v} = -\mathbf{i}$ and $\mathbf{u}, \mathbf{v}, \mathbf{w}$ form an equilateral triangle. Find \mathbf{w} and \mathbf{u} .