

**King Fahd University of Petroleum & Minerals**

Department of Mathematical Sciences

Math 201, Section : 15(051)

Quiz-1(a)

**Time: 15 Minutes**

**Marks:...../9**

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Name:

Serial #:

ID#:

Section #:

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1. Draw the graph of  $r = 3 \sin 2\theta$ .

2. For the curve  $r = 1 - \cos \theta$ , find points at which tangent line is vertical

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1. Draw graph of the curve  $r = 2 - 2\cos\theta$  and find length of this curve.

2. For the curve  $r = 4 - 3\sin\theta$ , find slope of the tangent line at  $\theta = \pi$ .