Name:.....Sec:....Ser:....

Q.1: Sketch the graph of the parametric equations  $x = t^2 - 3$ , y = 4 - 3t and mark the direction in which the curve is traced for  $-3 \le t \le 3$ . Find equation of tangent line to the curve at t = -1. Also eliminate the parameter t to find corresponding cartesian equation.

, ,		
t	x	y

**Q.2:** Find the exact length of the curve  $x = 3 + 3t^2$ ,  $y = 1 + 2t^3$  for  $0 \le t \le 1$ 

**Q.3:** Sketch the graph of the polar equation  $r = 3 - 2\cos(\theta)$ .

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	$\theta$	r	