Math 172 Quiz 10 Sections: 11.3, 11.4 7 Dec 2018

Point values in boxes.

1. Convert the following polar equations into rectangular coordinates, or rectangular to polar expressing your solution in the form  $r = f(\theta)$ .

(a) 
$$\boxed{1}$$
  $r = \frac{4}{2\sin\theta - \cos\theta}$ 

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

2. 3 Find the length of the polar curve  $r = \sec \theta$  for  $\theta \in [0, \pi/4]$ .

<u>Given</u>:  $\sin(2x) = 2\sin x \cos x || \sin^2 x = (1 - \cos(2x))/2 || \cos^2 x = (1 + \cos(2x))/2$ 

- 3. Polar area and graphing.
  - (a) 2 Sketch the curves r = 1 and  $r = 1 + \cos \theta$ .



(b) 3 Find the area inside the curve  $r = 1 + \cos \theta$  but outside the curve r = 1. Shade the region to indicate the area you are trying to find.