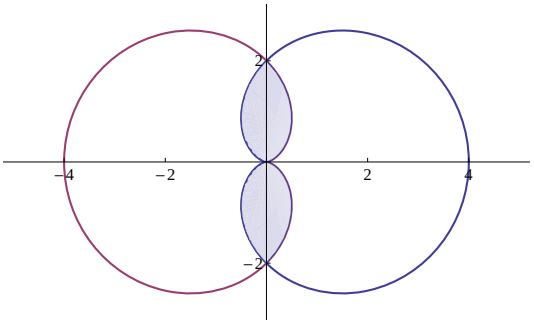
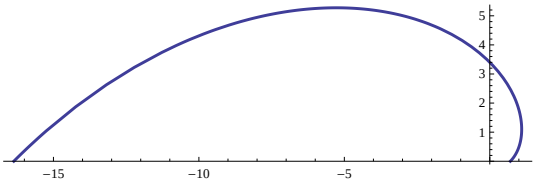
2014–15 **MAT233 Matematik III – Ödev 4** N. Course

SON TESLİM TARİHİ: Çarşamba 12 Kasım 2014 saat 10:00'e kadar.





Egzersiz 9 (Areas in Polar Coordinates)**.** [50p] Find the area of the region enclosed by both the polar curve $r = 2(1 + \cos\theta)$ and the polar curve $r = 2(1 - \cos\theta)$.

Egzersiz 10 (Lengths in Polar Coordinates)**.** [50p] Find the length of the polar curve

$$r = \frac{e^{\theta}}{\sqrt{2}}$$

for $0 \leq \theta \leq \pi$.

Ödev 3'ün çözümleri

7. (i) $(1, 1)$, (ii) $(1, 0)$, (iii) $(0, 0)$, (iv) $(-1, -1)$, (v) $(\frac{3\sqrt{3}}{2}, -\frac{3}{2})$, (vi) $(3, 4)$.

8. (a) Since $1 + 2\sin(-\theta) = 1 - 2\sin\theta \neq r$ and $1 + 2\sin(\pi - \theta) = 1 + 2\sin\theta \neq -r$, the graph is not symmetrical about the x-axis. Since $1 + 2\sin(\pi - \theta) = 1 + 2\sin\theta = r$, the graph is symmetrical about the y-axis. Therefore it is not symmetrical about the origin.

(b)