

7. [9 points] Suppose that you invest \$5000 in a savings account that pays 2.5% interest, compounded annually. At the end of each year you withdraw the interest made on the principal in the account, and then reinvest \$100. Find a formula for R_n , the return (the amount that you take home, after the reinvestment) from the account at the end of n th year.

8. [8 points] Consider the area whose boundary is given in polar coordinates by the equations $\theta = \frac{\pi}{3}$ and $r = f(\theta)$. The continuous function $f(\theta)$ is defined for $\pi/3 \leq \theta \leq 3\pi/2$, and values of this function (spaced $\Delta\theta = 7\pi/24$ apart) are given in the table below.

$\theta =$	$\pi/3$	$5\pi/8$	$11\pi/12$	$29\pi/24$	$3\pi/2$
$f(\theta) =$	1.866	1.924	1.249	0.3912	0

Give a reasonably accurate estimate of the area of this region.