H.W

(1) Evaluate $\iint \sin\pi(x^2+y^2)\,dx\,dy$ over the region bounded by the circle $x^2+y^2=1$ by changing to polar coordinates. Ans. 2

(2) Evaluate $\int_0^{2a}\int_0^{\sqrt{2ax-x^2}} (x^2+y^2)\,dy\,dx$ by changing to polar coordinates. Ans. $\frac{3\pi a^4}{4}$

(3) Evaluate $\iint (x^2+y^2)^{7/2}\,dx\,dy$ over the circle $x^2+y^2=1$. Ans. $\frac{2\pi}{9}$