1. Based on the following code, identify (1) the rectangular box being used to enclose the region of integration, R, and (2) the region of integration.

```
fc = @(x,y) x.*y;
npoints = 100000;
xyvals = rand(npoints,2);
xyvals(:,1) = xyvals(:,1)*9;
xyvals(:,2) = xyvals(:,2)*3;
indomain = (-xyvals(:,1)+xyvals(:,2).^2)<0; %set to 1 if in domain; 0 if not
sum(fc(xyvals(:,1),xyvals(:,2)).*indomain)*27/npoints
```

2. (parameterization of a circle). Provide a parameterization for a circle of radius 3, centered at $(2, -5)$, and traversed clockwise. Traverse the circle once (at a speed of your choice).

3. (velocity) Find $\underline{v}(t)$ for $\underline{r}(t) = \langle e^t, 3t^4, \cos t \rangle$.