Q1. (8,8,3)

Q2. {000|0|0, 0||00|0, |0|0|0|0}

Q3. None of these

Q4. LBD

Q5. 2

Q6. equally likely

Q7. b

Q8. Exist {111000, |00||0, 0|00||, 00||0|}

Q9.

Since $2m = |V| \cdot r$, where $|V|$ is the number of vertex.

Since r is odd, we have $m = \frac{|V|}{2} r$, where $\frac{|V|}{2}$ is an integer

So $r | m$

Q10 for each point, we draw a circle of radius 1.

since the triangle formed by the centre of circle has an angle

We can have at most six circle around one circle

Q10 for each point, we draw a circle of radius 1.

since the triangle formed by the centre of circle has an angle greater than $\frac{\pi}{3}$

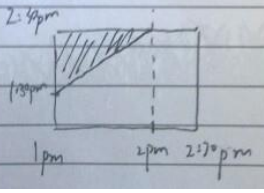
We can have at most six circle around the circle

Sum up such pairs interms of each point, each pair counted twice,

$\frac{1}{2} \cdot \sum_{\text{vertex}}$ number of circle around $v \leq \frac{1}{2} \sum_{\text{any}} 6 = 3n$, at most $3n$ pairs.

Q11. Suppose Martha arrive at time t, George at t'

$t' \nearrow t+30\text{min}$, is the area we want



$Pr(A) = \frac{\text{area of shadow}}{\text{area of rectangle}} = \frac{1}{2} \times \frac{2}{3} \times \frac{2}{3} = \frac{2}{9}$