Assignment 12

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

1) Let $P(x,y)$ be a $d$-degree bivariate polynomial. How many evaluations are needed at $y=a$ i.e. $P(x,a)$, to reconstruct $P(x,y)$?
   - $d$
   - $d^2$
   - $d+1$
   - Arbitrary set of points does not work

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   $d+1$

2) Given real numbers $a_1, \ldots, a_n$ such that $a_1 + \ldots + a_n = 1$, what is the minimum value that can be attained by $a_1^2 + \ldots + a_n^2$?
   - $1/n$
   - $1$
   - $1/n^2$
   - Minima does not exist.

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   $1/n$

3) Let $f(x,y)$ be a $d$-degree bivariate polynomial over a field $\mathbb{F}$ of characteristic 0. Let $S := \{ f(a, a^{d+1}) | a \in \mathbb{F} \}$, be an infinite set. How many values from $S$ suffices to reconstruct $f(x,y)$?
   - $S$ is not an interpolating set i.e. it is not possible to reconstruct $f$ from any such evaluations
   - $d$
   - $d^2$
   - $(d+1)^2$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   $(d+1)^2$