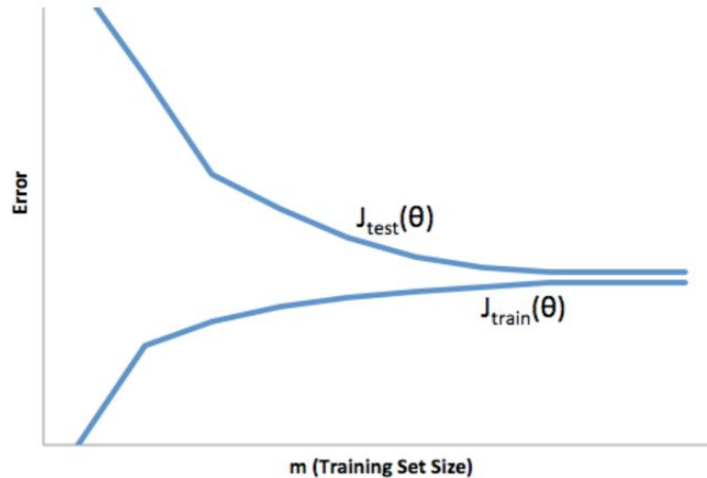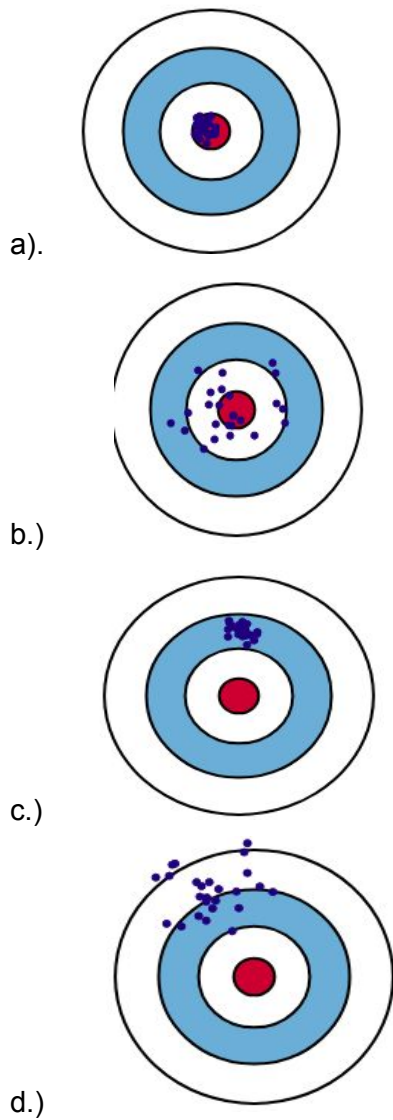## SMAI
Quiz 2 (16 Marks)

1) **(2 marks)** Answer the following question for the learning curve given below:

m (Training Set Size)

   a) Is it high bias or high variance?
   b) Does increasing the number of features help us in fixing it?

2) **(8 marks)** Suppose you have implemented Regularized Logistic Regression model for fraud order detection on your shopping website. But when you test the model on new orders, it failed miserably. Which of the following will be promising steps to take. Answer each one as **True/False**. Give 1 line explanation for each one.
   a) Try evaluating model on cross-validation set
   b) Try increasing the regularized parameter λ.
   c) Use fewer training examples.
   d) Try adding more features.

3) **[2 Marks]** MCQ's
   a) Suppose we train a decision tree classifier and find a optimal depth d. Which of the following statements will hold true for a decision tree with height less then d?
      i) It will have low bias and high variance
      ii) It will have high bias and low variance
      iii) It will have low bias as well as low variance
      iv) None of the above
   b) A neural network is found to have much lower training error then the test error. What effect it will have when we further increase the number of layers?
      i) Bias will increase
      ii) Variance will increase
      iii) Variance remains unchanged
      iv) None of the above

4) **[4 Marks]** Classical dart problem

a).

b.)

c.)

d.)

FILL THE FOLLOWING TABLE WITH TWO OPTIONS: LOW AND HIGH

	IMAGE A	IMAGE B	IMAGE C	IMAGE D
BIAS				
VARIANCE				