

MATH225N Week 5 Assignment: Central Limit Theorem for Means

Q1

A family of statisticians is trying to decide if they can afford for their child to play youth baseball. The cost of joining a team is normally distributed with a mean of \$750 and a standard deviation of \$185. If a sample of 40 teams is selected at random from the population, select the expected mean and standard deviation of the sampling distribution below.

Ans:

$$\sigma_{\bar{x}} = \$185$$



$$\sigma_{\bar{x}} = \$29.25$$



$$\sigma_{\bar{x}} = \$4.63$$



$$\mu_{\bar{x}} = \$118.59$$



$$\mu_{\bar{x}} = \$18.75$$



$$\mu_{\bar{x}} = \$750$$

Q2

A statistics student is trying to decide whether she should take a gamble and play Bingo. The average Bingo player earns \$9 per game, distributed normally, with a population standard deviation of \$8. If a sample of 25 Bingo players are selected at random from the population, select the expected mean of the sampling distribution and the standard deviation of the sampling distribution below.

Ans: