R Day 8:-

1. Test the hypothesis that the mean systolic blood pressure in a certain population equals 140 mmHg. The standard deviation has a known value of 20 and a data set of 55 patients is available.
120,115,94,118,111,102,102,131,105,107,115,139,115,113,114,105,115,134,109,109,93,118,109,106,125,150,142,119,127,141,149,144,142,149,161,143,140,148,149,141,146,159,152,135,134,161,130,125,141,148,153,145,137,147,175.

2. A coin is tossed 100 times and turns up head 43 times Test the claim that this is a fair coin. Use 5% level of significance to test the claim.

3. A manufacturer of sports equipment has developed a new synthetic fishing line that the company claims has a mean breaking strength of 8 kilograms with a standard deviation of 0.5 kilogram. Test the hypothesis that $\mu = 8$ kilograms against the alternative that μ is not equal to 8 kilograms if a random sample of 50 lines is tested and found to have a mean breaking strength of 7.8 kilograms. Use a 0.01 level of significance.