
HOMEWORK: TWO-SAMPLE HYPOTHESIS TESTING
TWO-SAMPLE T-TESTS

[Note that the last problem requires use of MS Excel]

PROBLEM 1:

Who lives longer, married or unmarried men? Test at $\alpha = .01$

Single Men

$$\bar{X}_1 = 72.5 \text{ years}$$

$$S_1 = 7.0 \text{ years}$$

$$n_1 = 14$$

Married Men

$$\bar{X}_2 = 74.5 \text{ years}$$

$$S_2 = 8.0 \text{ years}$$

$$n_2 = 16$$

PROBLEM 2:

Who does better on the CPA EXAM? Test at .05 significance level

College A: Average score = 70.5; standard deviation = 15.0; n = 12

College B: Average score = 66.5; standard deviation = 10.0; n = 18

PROBLEM 3:

Who misses work more often: male managers or female managers? Test at .05 significance level

Female Managers: Average number of times absent from work = 10.9 days;
standard deviation = 2.4 days; n = 10

Male Managers: Average number of times absent from work = 9.9 days;
standard deviation = 1.8 days; n = 20

PROBLEM 4:

Which yogurt ice cream has less fat? Test at .05 significance level

Company A:

Average amount of fat = 10.6 milligrams; standard deviation = 2.6 milligrams; n = 13

Company B:

Average amount of fat = 10.2 milligrams; standard deviation = 2.4 milligrams; n = 18

PROBLEM 5:

Which approach to treating brain cancer works best ? Test at .05 significance level

Approach A: lived on average and additional = 6.8 years; standard deviation = 1.6 years;
n = 14 patients

Approach B: lived on average and additional = 5.4 years; standard deviation = 2.4 years;
n = 12 patients

PROBLEM 6:

Who makes more money at Company X ? Test at .05 significance level

Men: Average gross income = \$48,500; standard deviation = \$1,000; n = 18 employees

Women: Average gross income = \$43,600; standard deviation = \$2,000; n = 11 employees

PROBLEM 7:

Who makes a better motor? Test at .05 significance level

Company ABC: Average life= 14.50 years; standard deviation = 1.50 years; n = 10

Company QQQ: Average life = 13.60 years; standard deviation = 2.10 years; n = 11

PROBLEM 8:

A company has two potential suppliers for a key part. The data below represents the life in hours of samples of the parts made by the two suppliers. Does it matter which supplier the company chooses? Test at a significance level (alpha) of .05. You may assume that the two variances are statistically equivalent. **SOLVE THIS PROBLEM USING MS EXCEL.**

Company															
ABC	151	153	177	166	149	151	201	199	189	177	165	192	194	202	
Company															
XYZ	168	158	176	181	101	153	130	124	122	127	160	202	181	148	129

PROBLEM 9:

A company is interested in determining whether there is a difference in job satisfaction between white and non-white employees. Job satisfaction is measured on a 0 (not at all satisfied) to 100 (extremely satisfied) scale. Test at a significance level of .05 and assume equal variances. **Use MS Excel.**

White	91	87	67	99	83	87	90	45	77	81	92	79	83	99	92	75
Non-White	74	66	81	39	49	55	67	71	62	50	58	60	73	70		