Week One Homework Assignment

Name of the Student

Name of the University

Week One Homework Assignment

**Q1)**

**Retread Tire Company**

1. Total cost = $Fixed cost+Variable cost$

Total cost = $65000+112500$

Total cost = $\$177500$

Revenue = $15000\*25$

Revenue = $\$375000$

Profit/Loss = $375000-177500$

Profit/Loss = $\$197500$

1. Contribution per unit = $25-7.5$

Contribution per unit = $17.5$

Break even volume = $65000/17.5$

Break even volume = $3714 units$

**Q2)**

**Evergreen Fertilizer Company**

1. Monthly break even volume = $\frac{25000}{0.45-0.20}$

Monthly break even volume = $100000 units$

**Q3)**

**Evergreen Fertilizer Company**

1. With price change

Monthly break even volume = $\frac{25000}{0.55-0.20}$

Monthly break even volume = $71429 units$

**Q4)**

**Evergreen Fertilizer Company**

1. Effect of advertising expenditure

Monthly break even volume = $\frac{25000+10000}{0.55-0.20}$

Monthly break even volume = $100000 units$

**Q5)**

**Annie MaCoy**

1. Break even Price = $\frac{3000+3500}{1500}+0.40$

Break even Price = $\$4.73$

1. Factors such as quality of food, the prices the competitors are offering for the same product and the level of occupancy of the stadium can have an effect on the volume sold.

**Q6)**

**Kerouac University**

1. Break even volume = $\frac{400000}{20000-10000}$

Break even volume = $40 students$

1. Revenue = $80\*20000$

Revenue = $\$1600000$

Total cost = $10000\*80$

Total cost = $\$800000$

Profit/Loss = $1600000-800000$

Profit/Loss = $\$800000$

1. Increase tuition to $25000

Reduce enrollment to 50

Revenue = $50\*25000$

Revenue = $\$1250000$

Total cost = $50\*10000$

Total cost = $\$500000$

Profit/Loss = $1250000-500000$

Profit/Loss = $\$750,000$

This option will cost the university $50,000 in loss. This would not be a suitable option to go for.

**Q7)**

**Probability for grade management**

1. Expected value = $4\*0.1+3\*0.2+2\*0.4+1\*0.2+0\*0.1$

Expected value = $2$

This makes the expected grade to be at C

1. Variance = $4^{2}\*0.1+3^{2}\*0.2+2^{2}\*0.4+1^{2}\*0.2+0^{2}\*0.1-(2)\^2$

Variance = $5.2-4$

Variance = $1.2$

**Q8)**

**Investment firm**

Expected value of good = $380000\*0.60+130000\*0.60$

Expected value of good = $\$306000$

Expected value of poor = $100000\*0.40+85000\*0.40$

Expected value of poor = $\$74000$

Taking the expected value of both the conditions into account, choosing the good option will prove beneficial for the firm.

**Q9)**

**Fertilizer bags**

 In order to find this, the z value needs to be found first.

 Z = $\frac{x-mean}{standard deviation}$

Z = $\frac{38-45}{5}$

Z = $-1.4$

Z = $\frac{50-45}{5}$

Z = $1$

The probability for z is in between -1.4 to 1

Using the table, the probability that the weight would be in between 38 and 50 pounds is 0.7606

**Q10)**

**Polo Development Firm**

Z = $\frac{18-15}{5}$

Z = $0.6$

The probability is around 0.7257 that people will not be able to occupy in 18 months.

**Q11)**

**National Video Store**

 Mean = 175

 Standard Deviation = 55

 Area under curve to be equal to 0.85 = 0.85-1.00 = 0.75

 Value for 0.75 on the table gives a z value of = 0.68

Z = $\frac{x-175}{55}$

0.68 = $\frac{x-175}{55}$

X = $\frac{x-175}{55}$

X = 212.4 or 212 units