1) *Tire Life* - The life of a tire is normally distributed with a mean of 76,000 miles and a standard deviation of 10,000 miles.

a) Determine the probability that a tire will last for less than 67,000 miles.

b) Determine the probability that a tire will last for more than 67,000 miles.

c) Determine the probability that a tire will last for less than 80,000 miles.

d) Determine the probability that a tire will last between 67000 and 80000 miles?

e) The company offers a warranty. The warranty costs $8 per tire returned. If the company sets the warranty miles at 67000, how much on average per tire will the warranty cost?

2) *Church Fund Raiser* - The amount of money earned at the church charity auction for the last 20 years is in the following table. Assume a normal distribution. (Use Excel)

What is the mean?

|  |  |
| --- | --- |
| Year | Amount |
| 1 | 349 |
| 2 | 280 |
| 3 | 390 |
| 4 | 470 |
| 5 | 380 |
| 6 | 430 |
| 7 | 290 |
| 8 | 477 |
| 9 | 298 |
| 10 | 449 |
| 11 | 370 |
| 12 | 375 |
| 13 | 405 |
| 14 | 490 |
| 15 | 402 |
| 16 | 410 |
| 17 | 330 |
| 18 | 510 |
| 19 | 325 |
| 20 | 370 |

What is the standard deviation?

What is the probability that the church will earn less than $425 next year?

What is the probability that the church will earn more than $425 next year?

What is the probability that the amount will be between $400 and $475?