Suppose that the lifetimes of tires (of a particular brand) follow a normal distribution with mean 64,000 miles and SD 6,000 miles.

1. Draw a well-labeled sketch of this distribution.

2. What percentage of tires last for between 58,000 and 70,000 miles?

3. What percentage of tires last for less than 70,000 miles?

4. Calculate and interpret the z-score for a tire that lasts for 80,000 miles.

5. If the manufacturer wants to offer a guarantee so that 97.5% of all tires last for longer than the guaranteed lifetime, how many miles should they guarantee?