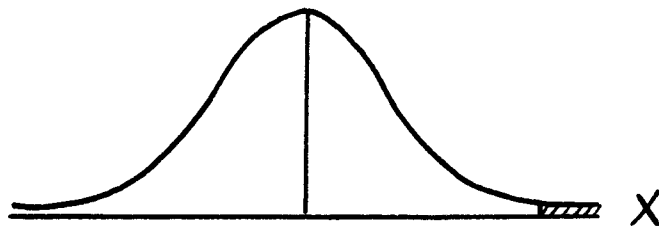


2.1 A buyer for a lumber company must decide whether to buy a piece of land containing 5,000 pine trees. If 1,000 of the trees are at least 40 feet tall, the buyer will purchase the land, otherwise, he will not. The owner of the land reports that the height of the trees has a mean of 30 feet and a standard deviation of 3 feet. Based on this information, what is the buyer's decision?

We must assume that the height of trees is normally distributed.



$$P(x > 40) = \text{normalcdf}(40, 1E99, 30, 3) \approx 4.29 \text{ E} - 4 \\ \approx 0.000429$$

$$\text{Multiply} \quad 0.000429 \times 5000 \approx 2.146$$

Not even 3 trees - Don't Buy!

STUDY: Chapter 5: Section 5.3

- Normal probability distributions