

1) For a normally distributed set of data with mean 74 and standard deviation 8, find the following probabilities.

- a. $P(58 \leq x \leq 74)$
- b. $P(66 \leq x \leq 90)$
- c. $P(x \geq 90)$
- d. $P(x \leq 82)$

2) A normal distribution has a mean of 25 and a standard deviation of 5.

Find the percent of values are ...

- a. between 20 and 30
- b. between 10 and 25
- c. at least 20
- d. at most 30
- e. What values make up the middle 95%?

3) The weights of 1800 fish in a lake are normally distributed with a mean of 3 kg and a standard deviation of 0.6 kg.

- a. About how many of the fish weigh 2.4 kg or more?
- b. About how many of the fish weigh less than 1.8 kg?
- c. About how many of the fish weigh between 2.4 kg and 4.2 kg?
- d. About how many of the fish weigh between 1.8 kg and 4.8 kg?

4) A forester sampled 27 trees in a wooded area and found that the mean diameter of the trees is 15.4 inches with a standard deviation of 3.7 inches. Suppose that this sample of trees provides an accurate description of the entire forest and that the trees are normally distributed.

- a. What is the range of diameters for the middle 95% of the trees in the forest?
- b. What percent of the trees in the forest should be less than 8 inches in diameter?
- c. What is the probability that a selected tree will be between 11.7 and 15.4 inches in diameter?
- d. There are approximately 1540 trees in the forest. About how many trees are over 19.1 inches in diameter?