# Section 6.3 — Probability Using a Normal Distribution

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# Outline

Examples

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Recently, birth weights of Norweigans were reported to have a mean of 3668g and a standard deviation of 511g. Suppose that these birth weights follow a normal distribution and that a baby was chosen at random.

• What is the probability that the baby's birth weight was less than 4000g?

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- What is the probability that the baby's birth weight was greater than 3750g?

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- What is the probability that the baby's birth weight was greater than 3750g?
- What is the probability that the baby's birth weight was between 3000g and 4000g?

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- What is the probability that the baby's birth weight was greater than 3750g?
- What is the probability that the baby's birth weight was between 3000g and 4000g?
- What percentage of baby's birth weights are greater than 2000g?

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• Find the percentage of this population who have blood cholesterol levels less than 150 mg/dL.

3

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- Find the percentage of this population who have blood cholesterol levels less than 150 mg/dL.
- Find the percentage of this population who have blood cholesterol levels which exceed 170 mg/dL.

The total blood cholesterol levels in a certain Mediterranean population are found to be normally distributed with a mean of 160 mg/dL and a standard deviation of 50 mg/dL.

- Find the percentage of this population who have blood cholesterol levels less than 150 mg/dL.
- Find the percentage of this population who have blood cholesterol levels which exceed 170 mg/dL.
- Find the percentage of this population of have blood cholesterol levels between 150 and 200 mg/dL.