

Chapter 13 Homework assignment

1. The Wechsler Adult Intelligence Scale (WAIS) is an IQ test. The scores on the WAIS for the 20 to 34 years age group are approximately normally distributed with a mean of 110 and a standard deviation of 15. The scores for the 60 to 64 years age group are approximately normally distributed with a mean of 90 and a standard deviation of 15. Sarah, who is 30, scores 130 on the WAIS. Her mother, who is 60, takes the test and scores 115.

True or false:

Sarah's mother scored higher than Sarah relative to her age group.

Answer

2. The length of human pregnancies from conception to birth varies according to a distribution that is approximately Normal with a mean of 266 days and standard deviation 16 days. Use the 68-95-99.7 rule to answer the following question.

Fill in the blanks:

Almost all (99.7 percent) pregnancies fall between ___ to ___ days. (Give your answers as whole numbers.)

Answer 1

Answer 2

3. The length of horse pregnancies from conception to birth varies according to a roughly Normal distribution with a mean of 336 days and standard deviation 3 days. Use the 68-95-99.7 rule to answer the following question.

Fill in the blank:

About _____ percent of horse pregnancies are less than 333 days.

Answer

4. The distribution of the heights of young men is approximately normal with a mean of 70 inches and a standard deviation of 2.5 inches.

Fill in the blank:

The standard score of a height of 72 inches (6 feet) is ___. (Give your answer to one decimal place.)

Answer

5. The distribution of heights of young men is approximately Normal with a mean of

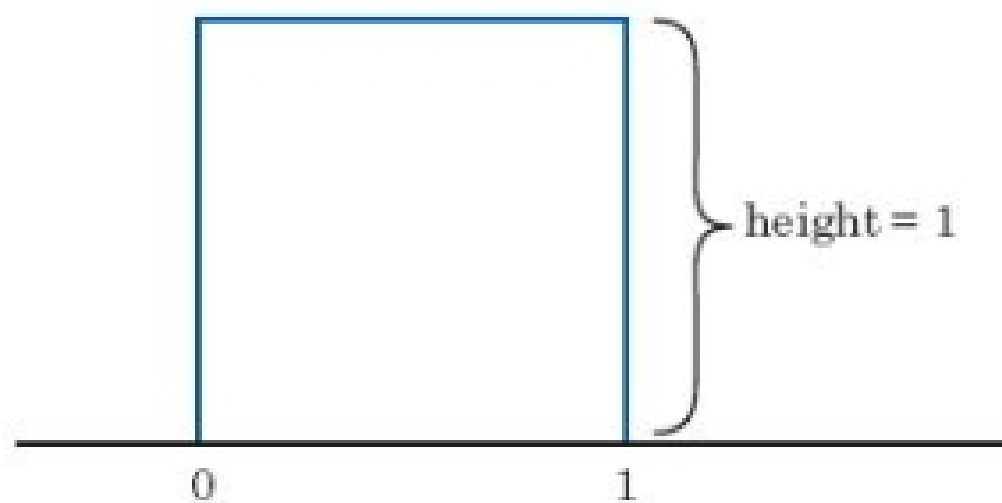
70 inches and a standard deviation of 2.5 inches. Use the 68-95-99.7 rule to answer the following question.

Fill in the blank:

_____ percent of men are shorter than 65 inches. (Give your answer to one decimal place.)

Answer

6. If you use a computer to generate "random numbers" between 0 and 1, you will get observations from a uniform distribution. The following figure shows the density curve for a uniform distribution.



The curve takes the constant value 1 between 0 and 1 and the value zero outside this range.

State whether the following statement is true or false: The total area under the curve is 1.

Answer

7. The distribution of the heights of young men is approximately normal with a mean of 70 inches and a standard deviation of 2.5 inches.

Fill in the blanks:

The heights of the middle 95 percent of men fall between ____ inches and ____ inches. (Give your answers as whole numbers.)

Answer 1

Answer 2

8. The length of horse pregnancies from conception to birth varies according to a roughly Normal distribution with a mean of 336 days and standard deviation 3 days. Use the 68-95-99.7 rule to answer the following question.

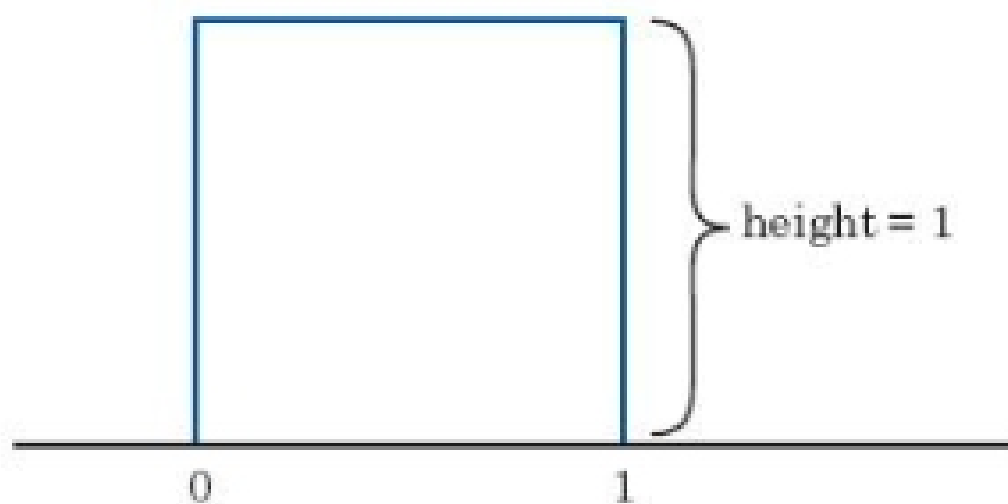
Fill in the blanks:

The correct range that contains the middle 95 percent of all horse pregnancies is _____ to _____. (Give your answers as whole numbers.)

Answer 1

Answer 2

9. If you use a computer to generate "random numbers" between 0 and 1, you will get observations from a uniform distribution. The following figure shows the density curve for a uniform distribution.



The curve takes the constant value 1 between 0 and 1 and the value zero outside this range.

Fill in the blanks:

The curve is symmetric. The value of the mean is ____, and the value of the median is _____. (Give your answer to 1 decimal place.)

Answer 1

Answer 2

10. The length of human pregnancies from conception to birth varies according to a distribution that is approximately Normal with a mean of 266 days and standard deviation 16 days. Use the 68-95-99.7 rule to answer the following question.

How long are the longest 2.5 percent of all pregnancies?

- A. Longer than 282 days
- B. Longer than 298 days
- C. Less than 234 days

11. The stemplot of the IQ test scores of 74 seventh-grade students is displayed.