

LESSON
6.3**Practice C**

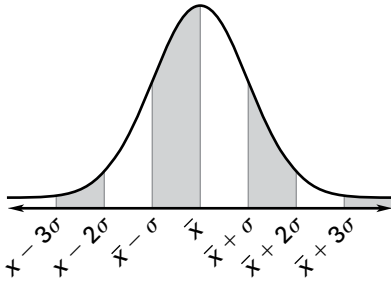
For use with the lesson "Use Normal Distributions"

A normal distribution has mean \bar{x} and standard deviation σ . Find the indicated probability for a randomly selected x -value from the distribution.

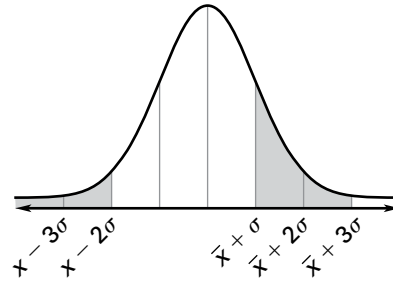
1. $P(x \geq \bar{x} + 3\sigma)$ 2. $P(x \leq \bar{x} - 3\sigma)$ 3. $P(x \leq \bar{x} + 2\sigma)$

Give the percent of the area under the normal curve represented by the shaded region.

4.



5.



A normal distribution has a mean of 63.7 and a standard deviation of 2.9. Find the probability that a randomly selected x -value from the distribution is in the given interval.

6. Between 63.7 and 69.5 7. Between 60.8 and 72.4 8. Between 57.9 and 66.6
9. At least 66.6 10. At least 57.9 11. At most 69.5

A normal distribution has a mean of 125.8 and a standard deviation of 10.4. Use the standard normal table on page 759 of your textbook to find the indicated probability for a randomly selected x -value from the distribution.

12. $P(x \leq 117.3)$ 13. $P(x \leq 92.6)$ 14. $P(x \leq 140.1)$
15. $P(x \geq 131.8)$ 16. $P(x \geq 153.7)$ 17. $P(x \geq 103.9)$
18. $P(124 \leq x \leq 145.6)$ 19. $P(99.8 \leq x \leq 112.3)$ 20. $P(136.1 \leq x \leq 165.3)$

In Exercises 21–23, use the following information.

Obstacle Course Two different obstacle courses were set up for gym class. The times to complete Course A are normally distributed with a mean of 54 seconds and a standard deviation of 6.1 seconds. The times to complete Course B are normally distributed with a mean of 1 minute, 25 seconds and a standard deviation of 8.7 seconds. Matt completed Course A in 59 seconds. John completed Course B in 1 minute, 31 seconds.

21. Find the z -score for Matt's time.
22. Find the z -score for John's time.
23. Which student had the better time? *Explain.*