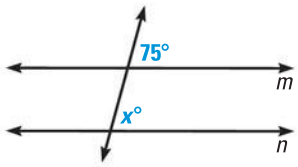
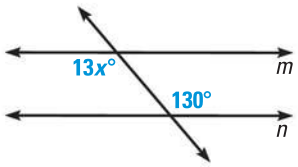
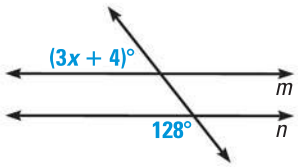
CUMULATIVE REVIEW Chapters 1–12

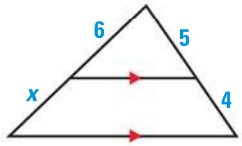
Find the value of x that makes $m \parallel n$. *(p. 161)*

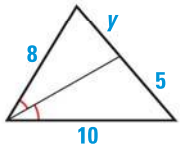
1. 

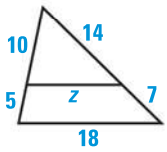
2. 

3. 

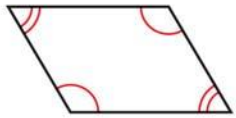
Find the value of the variable. *(p. 397)*

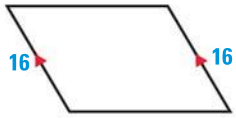
4. 

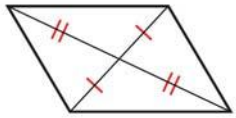
5. 

6. 

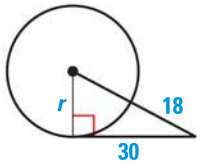
Explain **how you know that the quadrilateral is a parallelogram.** *(p. 522)*

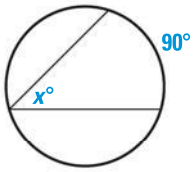
7. 

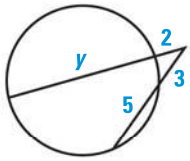
8. 

9. 

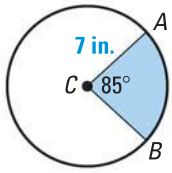
Find the value of the variable. *(pp. 651, 672, 690)*

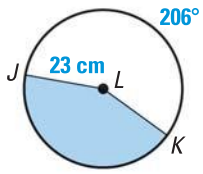
10. 

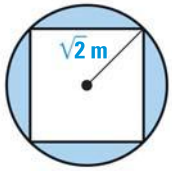
11. 

12. 

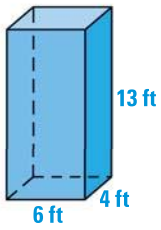
Find the area of the shaded region. *(p. 755)*

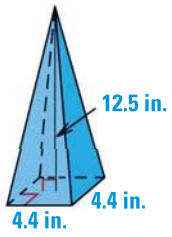
13. 

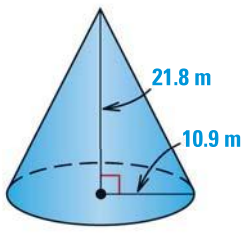
14. 

15. 

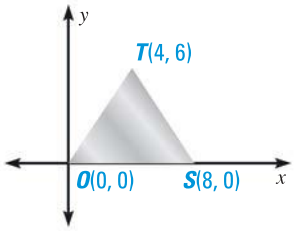
Find the surface area and volume of the right solid. Round your answer to two decimal places. *(pp. 803, 810, 819, 829)*

16. 

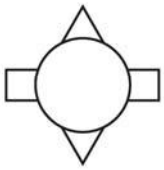
17. 

18. 

19. **PHYSICS** Find the coordinates of point P that will allow the triangular plate of uniform thickness to be balanced on a point. *(p. 319)*



20. **SYMMETRY** Copy the figure on the right. Determine whether the figure has *line symmetry* and whether it has *rotational symmetry*. Identify all lines of symmetry and angles of rotation that map the figure onto itself. *(p. 619)*

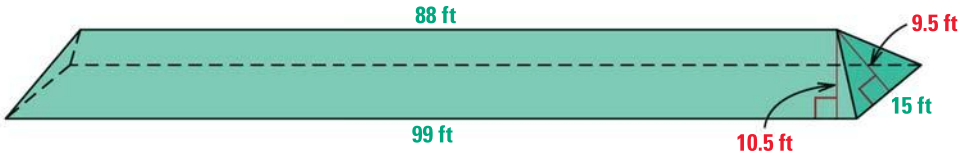


21. **TWO-WAY RADIOS** You and your friend want to test a pair of two-way radios. The radios are expected to transmit voices up to 6 miles. Your location is identified by the point $(-2, 4)$ on a coordinate plane where units are measured in miles. *(p. 699)*

    a. Write an inequality that represents the area expected to be covered by the radios.

    b. Determine whether your friend should be able to hear your voice when your friend is located at $(2, 0)$, $(3, 9)$, $(-6, -1)$, $(-6, 8)$, and $(-7, 5)$. *Explain* your reasoning.

22. **COVERED BRIDGE** A covered bridge has a roof with the dimensions shown. The top ridge of the roof is parallel to the base of the roof. The hidden back and left sides are the same as the front and right sides. Find the total area of the roof. *(pp. 720, 730)*



23. **CANDLES** The candle shown has diameter 2 inches and height 5.5 inches. *(pp. 803, 819)*

    a. Find the surface area and volume of the candle. Round your answer to two decimal places.

    b. The candle has a burning time of about 30 hours. Find the approximate volume of the candle after it has burned for 18 hours.

24. **GEOGRAPHY** The diameter of Earth is about 7920 miles. If approximately 70 percent of Earth's surface is covered by water, how many square miles of water are on Earth's surface? Round your answer to two decimal places. *(p. 838)*