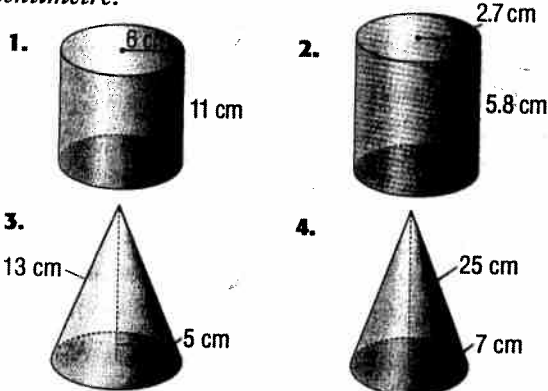
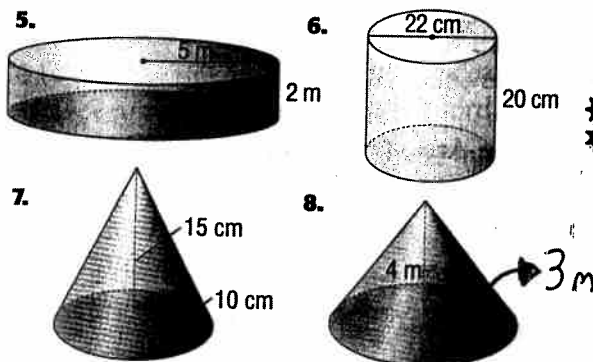


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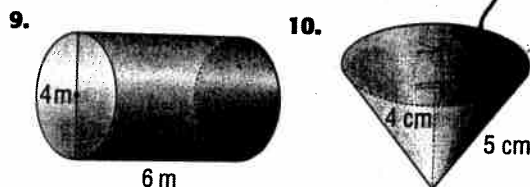
Calculate each surface area to the nearest square centimetre.



Estimate, then calculate each volume.



Calculate the surface area and volume of the following.



Problems and Applications

11. A paper cup at a water dispenser has a conical shape. The radius of the cup is 3 cm, and its height is 6 cm.
 a) Find the slant height of the cup to the nearest tenth of a centimetre.
 b) Calculate how much paper, to the nearest square centimetre, is required to make the cup.

12. The Canadarm used on the space shuttle is a cylinder that is 15.2 m long with a diameter of 38 cm. What is its surface area to the nearest tenth of a square unit?

13. A cone-shaped container has a diameter of 20 cm and a height of 20 cm. How many litres of water will the cone hold to the nearest litre?

14. A hobby club runs remote-controlled boats in a tank that is shaped as shown.



What volume of water can this tank hold to the nearest cubic metre?

15. Paper towels are sold in packages of 2 rolls. Each roll is a cylinder with a height of 30 cm and an outer diameter of 12 cm.
 a) Design a shipping carton that will contain 12 packages of paper towels.
 b) The inner diameter of each roll is 4 cm. How much wasted space is there in the carton?
16. Write a problem that requires the calculation of the surface area and volume of a cone. Have a classmate solve your problem.

NUMBER POWER

Place the digits from 1 to 9 in the circles so that the consecutive sums of the four numbers on each side differ by 1.

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- Practice** 1. 641 cm² 2. 144 cm² 3. 283 cm²
 4. 703 cm² 5. 157 m³ 6. 7598.8 cm³ 7. 1570 cm³
 8. 37.68 m³ 9. 100.48 m², 75.36 m³ 10. 75.36 cm², 37.68 cm³
Problems and Applications
 11. a) 6.7 cm b) 91 cm² 12. 16.4 m² 13. 2 L
 14. 8 m³