

PRACTICE EXERCISES

1. A spherical container with a radius of 4 feet is filled with a gas that costs \$12 per cubic yard. What is the total value of the gas in the container?
A. \$3216.99 B. \$119.15 C. \$1072.33 D. \$357.45
2. Euclid's beer mug is shaped basically like a cylinder that is 8 inches tall with a radius of 3 inches. Aristotle's beer glass is shaped basically like a cone that is 18 inches tall with a diameter of 4 inches. Which vessel holds the most beer?
A. Euclid's B. Aristotle's C. they have the same capacity
3. Suppose that a rectangular aquarium that is 12 inches long, 8 inches wide and 8 inches high provides enough room to safely house 6 guppies. Assuming that the number of guppies that can be safely housed depends upon the size of the aquarium, how many guppies can be safely housed in an aquarium that is 24 inches long, 16 inches wide and 16 inches high?
A. 8 B. 24 C. 32 D. 48
4. Plato stores his Pokeman cards in a shoe box measuring 8 inches by 14 inches by 6 inches. Socrates stores his Magic cards in a cake box measuring 1 foot by 1 foot by 5 inches. Whose container has the greater capacity?
A. Plato's B. Socrates' C. they have the same capacity
5. A marble with a radius of 1 cm. has a mass of 10 grams. What would be the mass of a similar marble whose radius is 2 cm?
A. 5 grams B. 80 grams C. 20 grams D. 40 grams
6. A cone-shaped container with a height of 6 inches and radius of 2 inches is filled with a substance that is worth \$5 per cubic foot. Find the total value of the substance in the container.
A. \$125.66 B. \$376.99 C. \$0.07 D. \$0.22
7. People living in Florida sometimes find that the water in their swimming pools becomes uncomfortably warm during the summer months. This situation can be rectified by adding ice cubes to the pool. The following authentic formula can be used to determine the approximate number (N) of 5-pound bags of ice required to reduce the temperature of a pool by D degrees Fahrenheit if the volume of the pool is V cubic feet: $N = 0.06125DV$. Gomer's pool is roughly rectangular in shape, with a length of 50 feet, width of 20 feet and average depth of 5 feet. How many bags of ice will be required to reduce the temperature of the pool by 10° ?
A. 306 B. 3063 C. 9 D. 92

8. Homer's pool is circular with a diameter of 24 feet and height of 4 feet. Using the formula from the previous problem, how many bags of ice are required to reduce the temperature from 85° to 70° ?
- A. 10,857 B. 6,650 C. 2,714 D. 1,663
9. A cylindrical can that is four inches tall and has a radius of 1.5 inches can hold 10¢ worth of soda. Assuming that the value of the contents is proportional to the size (volume) of the can, what would be the value of the soda contained in a can that is 8 inches tall with a radius of 3 inches?
- A. 40¢ B. 90¢ C. 20¢ D. 80¢ E. None of these
10. Concrete costs \$105 per cubic yard. Plato is making a rectangular concrete garage floor measuring 33 feet long by 15 feet wide by 6 inches thick. How much will the concrete cost?
- A. \$311850 B. \$9.17 C. \$962.50 D. \$247.50
11. Aristotle stores his Kool-Aid in a cylindrical container with a diameter of 5.5 feet and a height of 8.25 feet. If the filled container springs a leak and the Kool-Aid is escaping at a rate of 8 cubic feet per hour, how long will it take before the container is empty?
- A. 98 hours B. 15 hours
C. 24.5 hours D. 196 hours
12. Gomer is digging a hole for a rectangular swimming pool measuring 38 feet long by 22 feet wide by 8 feet deep. How much water will the swimming pool hold, assuming that 1 cubic foot = 7.5 gallons.
- A. 50160 gallons B. 891.73 gallons
C. 75240 gallons D. 37620 gallons

ANSWERS TO PRACTICE EXERCISES

1. B 2. A 3. D 4. B 5. B 6. C
7. B 8. D 9. D 10. C 11. C 12. A