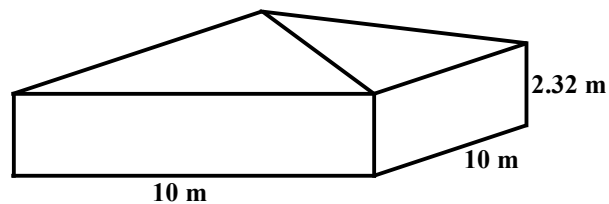


Remember: *It's best to draw the shape when it is not given!*

- Determine the surface area of a:
 - rectangular-based prism with a length 9 m, a width of 2 m and a height of 5 m
 - cylinder with radius 6 m and height 14 m
 - isosceles triangular prism with a triangle height 4 cm, slant height of 5 cm, a base of 6 cm, and a length of 18 cm
 - square-based pyramid that has a slant height of 6 cm and a square base of 5 cm
 - cone with height 12 cm and slant height 13 cm
 - sphere with diameter 6 cm
- What is the cost to make a box with dimensions 2 m \times 4m \times 3m if the cost of plywood is \$1.70/m²?
- What is the cost to make a cylindrical drainage pipe (no ends) 20 m long and 1 m in diameter if metal costs \$5.80/m²?
- What is the cost to make a wooden square-based pyramid with a slant height of 8 m and base that is 10 m \times 10 m if the wood costs \$3.75/m²?
- What is the cost to make an open conical crystal glass with a height of 18 cm and a radius of 4 cm if the crystal costs \$0.17/cm²?
- What is the cost of material to make a basketball 30 cm in diameter if rubber costs \$0.01/cm²?
- What is the difference in surface area between a cone and square-based pyramid if both of them have a slant height of 15 cm, the cone has a diameter of 10 cm and the pyramid has a base of 10 cm \times 10 cm?
- What is the minimum amount of plastic needed to create a cylinder to hold a cone of height 9 cm and radius 2 cm?
- What is the minimum amount of cardboard needed to make a rectangular prism to hold a cone with a diameter of 7 cm and a height 8 cm?
- How much cardboard is required for a box to exactly fit 3 golf balls with a radius of 2 cm?
- A storage shed is a rectangular prism, topped with a pyramid. The base is 8 m \times 8 m and has 2.5 m high walls. The roof in the shape of a pyramid that is 1.3 m high but there is no ceiling when you go inside. Also, the floor of the shed is made from plywood. If sheet metal costs \$15.50/m², and the plywood costs \$4.25/m², what is the minimum cost to build the shed?

12. Jack decides to paint the exterior of his house with two coats of paint and re-shingle the roof. One 4-L can of paint covers 35 m^2 and one bundle of shingles covers 2.25 m^2 .



- a) How many bundles of shingles will he need for the roof?
- b) How many cans of paint will he need (you do not need to take windows and doors into account)?
- c) If one can of paint costs \$49.99 and one bundle of shingles costs \$55.99, determine the total cost of the project, including HST.

13. A can of soup is 10.3 cm high and its diameter is 6.7 cm. How much paper is required to make the soup can label?

14. Three tennis balls, each 8cm in diameter, are stacked in a cylindrical container. Determine the minimum amount of packaging required to make the container.



15. A farmer had this temporary hoop barn built to store hay bales. The diameter of the structure is 60 ft and the length is 100ft. If the semi-cylindrical support posts are anchored to a cement foundation wall that is 1.2 feet off the ground, determine the amount of fabric required to cover the support posts (assume both ends are left open)



ANSWERS

- | | | |
|--|--------------------------|---------------------------|
| 1. a) 146 m^2 | b) 754.0 m^2 | c) 312 cm^2 |
| d) 85 cm^2 | e) 282.7 cm^2 | f) 113.1 cm^2 |
| 3. $\$364.^{42}$ | 4. $\$975.^{00}$ | 5. $\$39.^{39}$ |
| 7. The square-based pyramid has a surface area 85.8 cm^2 larger than the cone. | 8. 138.2 cm^2 | |
| 9. 322 cm^2 | 10. 224 cm^2 | 11. $\$2555.^{08}$ |
| 12. a) 48 bundles of shingles | b) 6 cans of paint | c) $\$3375.^{83}$ |
| 13. 217 cm^2 | 14. 703.7 cm^2 | 15. 9424.8 ft^2 |