

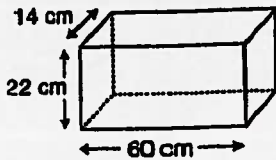
Date: _____



Chapter 9 Review

9.1 Volume of Prisms and Pyramids, textbook pages 364-371

1. Find the volume of the prism. If necessary, round your answers to one decimal place. Use $\pi = 3.14$.

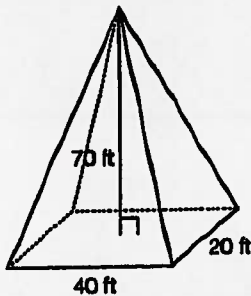


$$V = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

$$=$$

$$=$$

2. Find the volume of the pyramid.



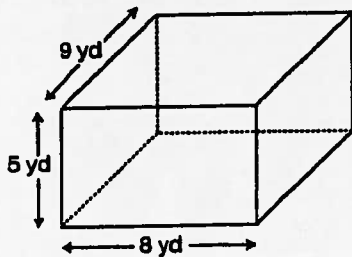
$$V = \underline{\hspace{1cm}} \text{ area of } \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$$

$$=$$

$$=$$

9.2 Surface Area of Prisms and Pyramids, textbook pages 372-380

3. Find the surface area of the prism.



Two faces have dimensions _____ cm by _____ cm.

$$\text{Area} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$$

$$= \underline{\hspace{1cm}}$$

Two faces have dimensions _____ cm by _____ cm.

$$\text{Area} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$$

$$= \underline{\hspace{1cm}}$$

Two faces have dimensions _____ cm by _____ cm.

$$\text{Area} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$$

$$= \underline{\hspace{1cm}}$$

$$\text{Surface Area} = 2(\underline{\hspace{1cm}}) + 2(\underline{\hspace{1cm}}) + 2(\underline{\hspace{1cm}})$$

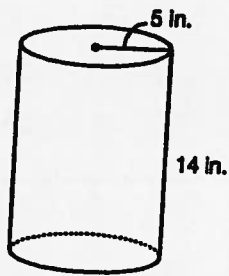
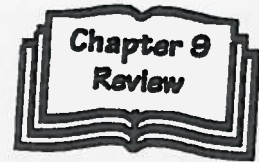
$$= \underline{\hspace{1cm}}$$

The surface area of the prism is _____ yd².

Date: _____

9.3 Surface Area and Volume of Cylinders, textbook pages 381-390

4. Find the surface area and volume of the cylinder.



Circular Top

SA = _____

Side

SA = _____ × _____

Cylinder

SA = _____

Volume

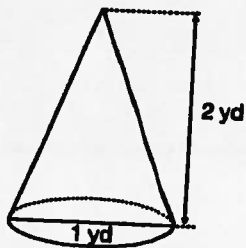
V = _____ r² _____

=

=

5. Find the volume of each object.

a)

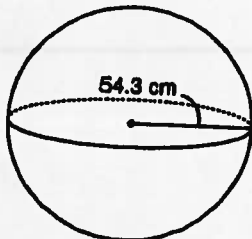


V = _____ r² _____

=

=

b)



V = _____ r³

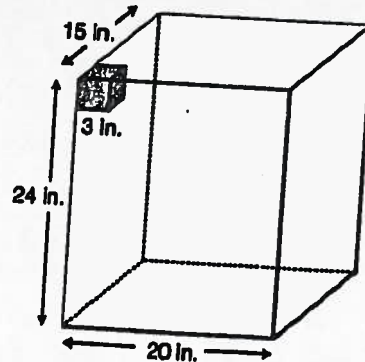
=

=

9.5 Solve Problems Involving Surface Area and Volume, textbook pages 398-405

6. The composite shape shown below is a rectangular prism with a cube removed from one corner.

a) Find the surface area of the composite shape.



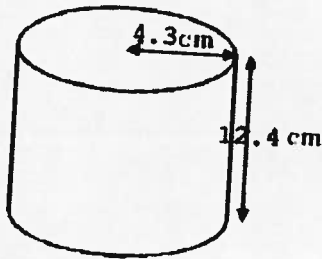
b) Find the volume of the composite shape.

Surface Area of 3-D Figures

QUIZ

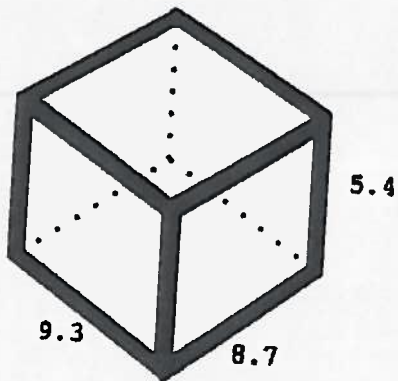
1. To the nearest square centimetre, what is the surface area of this cylinder?

$$S.A. = 2\pi r^2 + 2\pi rh$$

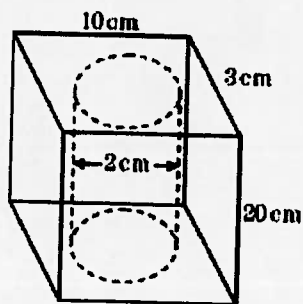


2. Calculate the surface area of this rectangular prism if all measurements are given in centimetres. Answer accurately to the nearest square centimetre.

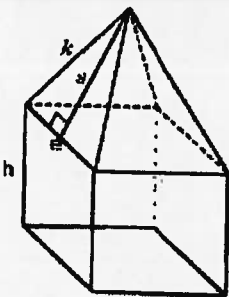
$$\text{Area of Rectangle} = \text{Length} \times \text{Width}$$



3. A hole 2 cm in diameter is drilled out of a solid block of metal 10 cm wide, 20 cm long, and 3 cm thick so that the block will fit a machine part. What is the new surface area of the block, correct to the nearest square centimetre?



4. The Shimkees bought a new house and they have decided to reshingle the roof and paint the house. They know that $h = 2.40$ m, $e = 24.0$ m (the house has a square base), $s = 12.5$ m and $k = 13.0$ m. One bundle of shingles covers 2.25 m² and one 4-L can of paint covers 35.0 m².



- (a) How many bundles of shingles do they need to cover the roof?
(b) How many cans of paint do they need to paint the four walls?
(c) If one can of paint costs \$27.45 find the cost of the paint?
(d) If a bundle of shingles costs \$34.56, find the cost of the shingles?

Answers

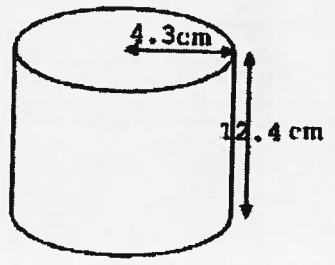
Surface Area of 3-D Figures

QUIZ

1. To the nearest square centimetre, what is the surface area of this cylinder?

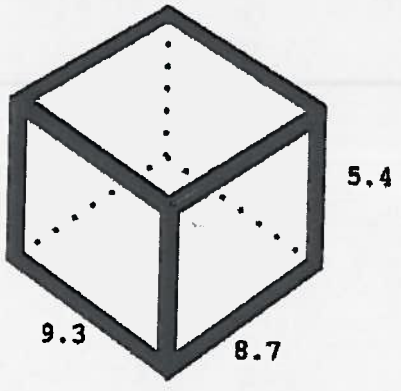
$$S.A. = 2\pi r^2 + 2\pi rh$$

$$16.12 + 334.85$$
$$451 \text{ cm}^2$$



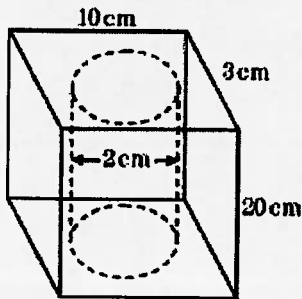
2. Calculate the surface area of this rectangular prism if all measurements are given in centimetres. Answer accurately to the nearest square centimetre.

$$\text{Area of Rectangle} = \text{Length} \times \text{Width}$$



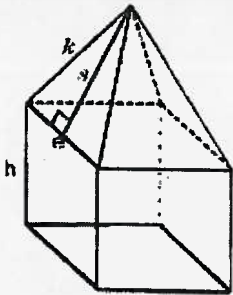
$$356 \text{ cm}^2$$

3. A hole 2 cm in diameter is drilled out of a solid block of metal 10 cm wide, 20 cm long, and 3 cm thick so that the block will fit a machine part. What is the new surface area of the block, correct to the nearest square centimetre?



$$580 - 131.88 = 448 \text{ cm}^2$$

4. The Shimkees bought a new house and they have decided to reshingle the roof and paint the house. They know that $h = 2.40$ m, $e = 24.0$ m (the house has a square base), $s = 12.5$ m and $k = 13.0$ m. One bundle of shingles covers 2.25 m^2 and one 4-L can of paint covers 35.0 m^2 .



a) Roof $\frac{24 \times 12.5}{2} = \frac{300}{2} = 150 \times 4 = 600 \text{ m}^2$

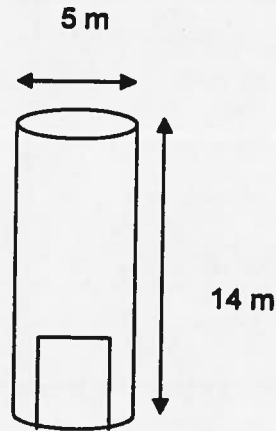
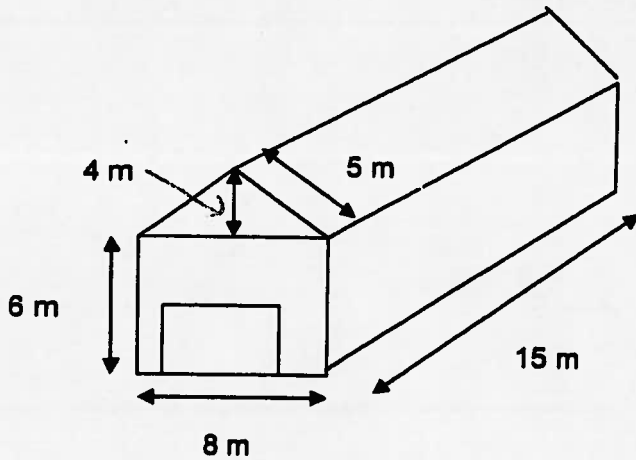
b) $L \times W \times 4$
 $24 \times 2.4 \times 4 = 230.4 \div 35 = 6.6$ or 7 cans

- (a) How many bundles of shingles do they need to cover the roof? $\rightarrow 267$ Bundles
 (b) How many cans of paint do they need to paint the four walls? $\rightarrow 7$ cans
 (c) If one can of paint costs \$27.45 find the cost of the paint? $\rightarrow 192.15$
 (d) If a bundle of shingles costs \$34.56, find the cost of the shingles? $\rightarrow 4227.52$

Old McDonald

Old McDonald wants to paint his barn-house and silo. The entire barn-house and silo will be painted red, EXCEPT for the two doors – those will be painted white. Be aware that it is not possible to paint the bottom of the barn-house and silo.

Here is what the barn-house and silo looks like:



The door of the barn-house has dimensions of 5 m wide by 4 m tall.

The door of the silo has dimensions of 3 m wide by 5 m tall.

1. a) What is the area of the barn-house door that will be painted white?

b) What is the area of the barn-house that will be painted red?

2. a) What is the area of the silo door that needs to be painted white?

b) What is the area of the silo that will be painted red?

3. a) What is the **total surface area** that will be painted red?

b) What is the **total surface area** that will be painted white?

4. a) What would the answer to 3a) be in squared feet?

b) What would the answer to 3b) be in squared feet?

5. If one can of paint will cover a total of 1000 ft²:

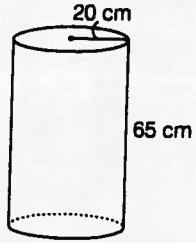
(a) How many cans of white paint will Old McDonald need to buy?

(b) How many cans of red paint will Old McDonald need to buy?

(c) How many paint cans will Old McDonald need to buy in total?

Where necessary, round your answers to one decimal place. Use $\pi = 3.1$.

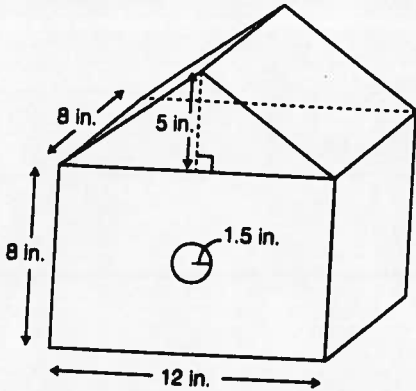
1. Find the surface area of the cylinder.



$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi rh \\
 &= 2\pi(\underline{\quad})^2 + 2\pi(\underline{\quad})(\underline{\quad}) \\
 &\doteq \underline{\quad} + \underline{\quad} \\
 &\doteq \underline{\quad}
 \end{aligned}$$

The surface area of the cylinder is approximately $\underline{\quad}$ cm².

2. All sides, including the bottom, of the birdhouse shown below are to be painted.



What is the total surface area that will be painted?

Area of back = $\underline{\quad} \times \underline{\quad}$
 $= \underline{\quad}$

Area of front = $\underline{\quad} \times \underline{\quad} - \underline{\quad}$
 $= \underline{\quad}$

Area of 2 sides = $\underline{\quad} \times \underline{\quad} \times \underline{\quad}$
 $= \underline{\quad}$

Area of base = $\underline{\quad} \times \underline{\quad}$
 $= \underline{\quad}$

Area of front and back triangles = $\underline{\quad} \times \underline{\quad} \times \underline{\quad}$
 $= \underline{\quad}$

Area of roof = $\underline{\quad} \times \underline{\quad}$