

Name: \_\_\_\_\_

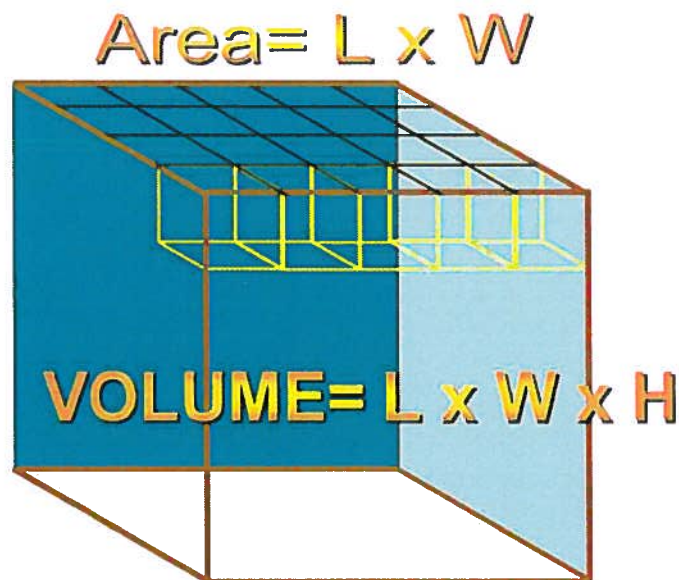
Start date: \_\_\_\_\_

Handin date: \_\_\_\_\_

# MATH 9

## *Module 7*

# Shape and Space



# Shape and Space

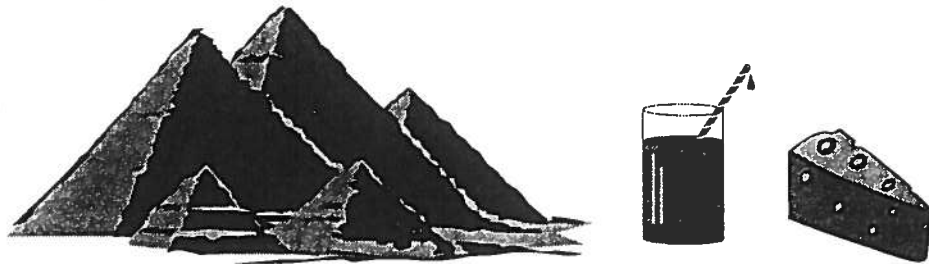
- 7.1 Areas of Rectangles, Squares, and Circles**
- 7.2 Areas of Parallelograms, Triangles, and Trapezoids**
- 7.3 Surface Area and Volume of a Prism**
- 7.4 Surface Area and Volume of a Pyramid**
- 7.5 Surface Area and Volume of a Cylinder and a Cone**

*Review*

*Chapter Check*

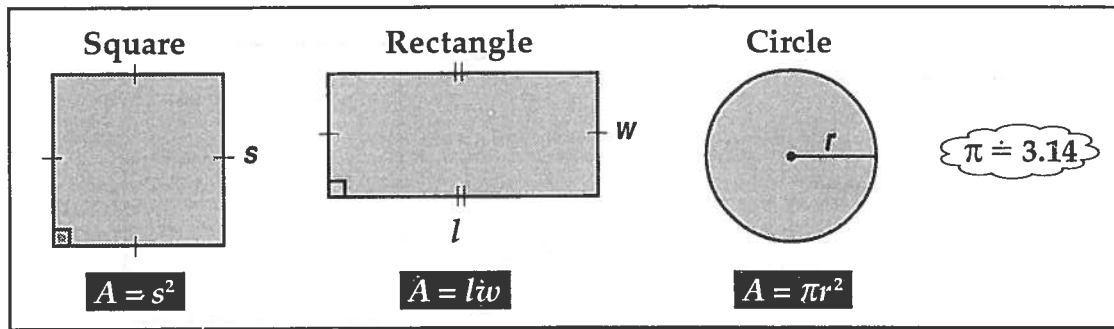
*Problem Solving: Using the Strategies*

**Answers CHAPTER 7 Shape and Space**

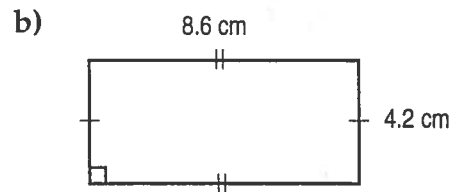
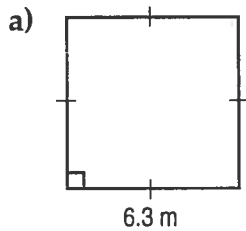


# 7.1 Areas of Rectangles, Squares, and Circles

## Practice



1. Find each area.



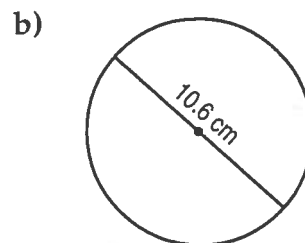
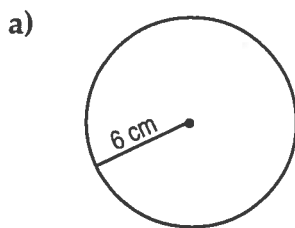
Formula

Substitute

Calculate



2. Calculate the area of each circle. Round your answer to the nearest square centimetre.

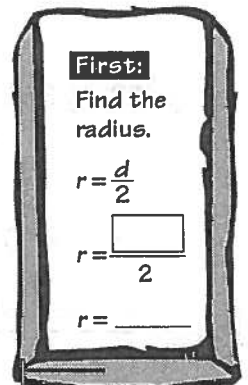


$$\begin{aligned}
 A &= \pi r^2 \\
 &\approx 3.14(6)^2 \\
 &\approx 3.14 \times 6 \times 6 \\
 &\approx \underline{\hspace{2cm}}
 \end{aligned}$$

Formula

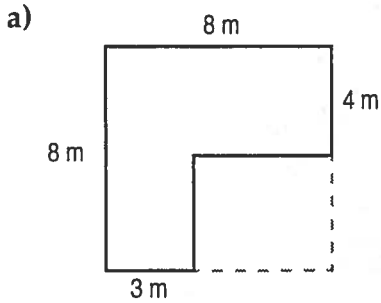
Substitute

Calculate

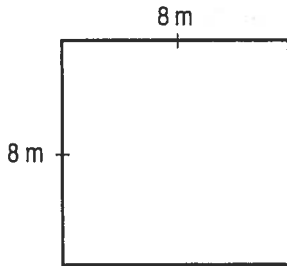


## Problems and Applications

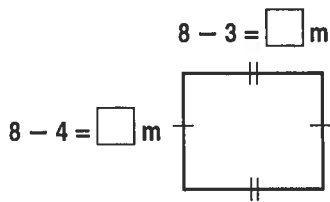
3. Calculate the area of each patio.



**First:** Calculate area of large square.



**Second:** Calculate area of small rectangle.



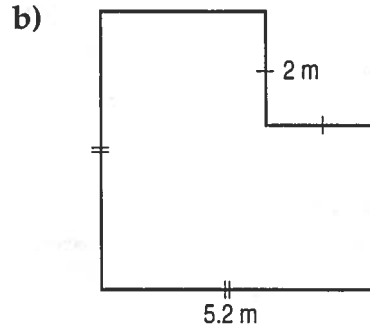
**Third:** Subtract the areas.

Area of large square = \_\_\_\_\_

Area of small rectangle = \_\_\_\_\_

Subtract

Area of patio = \_\_\_\_\_  $\text{m}^2$

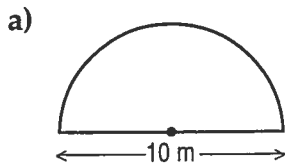


**First:** Calculate area of large square.

**Second:** Calculate area of small square.

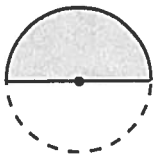
**Third:** Subtract the areas.

4. Calculate each area to the nearest square metre.



**First:** Find radius.

**Second:** Calculate area of circle.



Formula

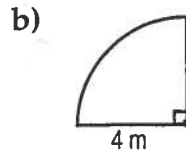
Substitute

Calculate

**Third:** Calculate area of  $\frac{1}{2}$  of circle.

Area of =  $\frac{\square}{2}$

= \_\_\_\_\_



**First:** Calculate area of circle.

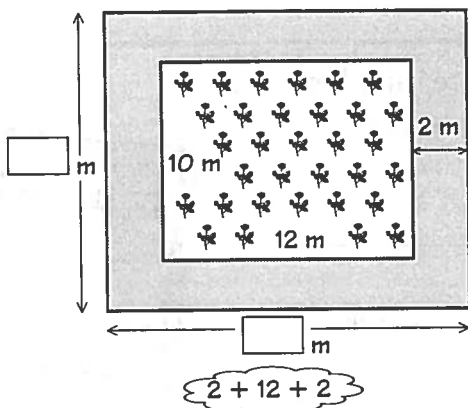


**Second:** Calculate area of  $\frac{1}{4}$  of circle.

Divide area by 4.



5. A garden measures 10 m by 12 m. A sidewalk surrounds the garden. The sidewalk is 2 m wide. What is the area of the sidewalk?



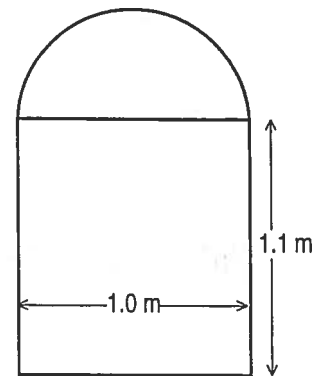
Hint: Area of sidewalk = Area of large rectangle - Area of garden

6. a) Calculate the area of the glass in this window.

Round your answer to the nearest tenth of a square metre.

**First:** Find area of  $\frac{1}{2}$  of circle.

**Second:** Find area of rectangle.



Find radius.  $\rightarrow r = 1.0 \div 2$

= \_\_\_\_\_

Find area of circle.  $\rightarrow$

**Third:** Add areas.

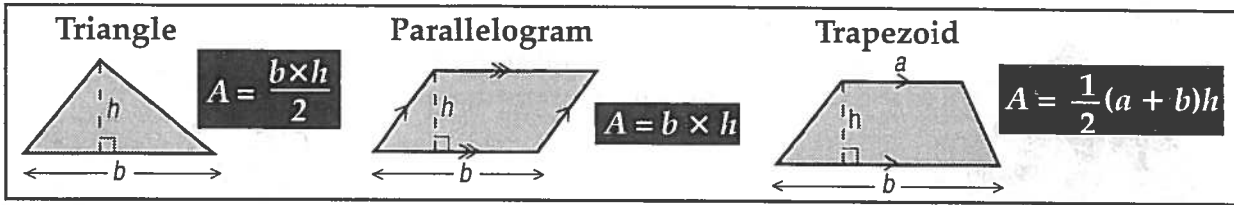
Divide area by 2.  $\rightarrow$

Sentence: \_\_\_\_\_

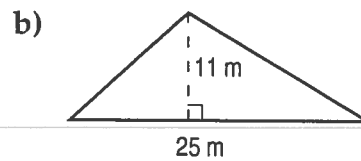
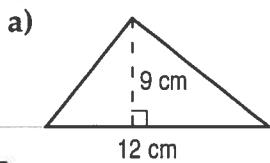
b) A protective storm window for this window costs \$19.99/m<sup>2</sup>. What is the cost of the storm window?

## 7.2 Areas of Parallelograms, Triangles, and Trapezoids

### Practice



1. Calculate the area of each figure.



$$A = \frac{b \times h}{2}$$

$$= \frac{9 \times 12}{2}$$

$$= \frac{\quad}{2}$$

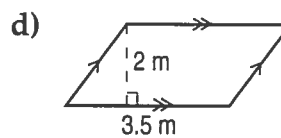
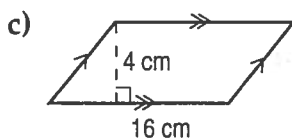
$$= \quad \text{cm}^2$$

Formula

Substitute

Multiply

Divide



$$A = b \times h$$

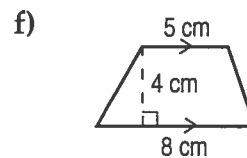
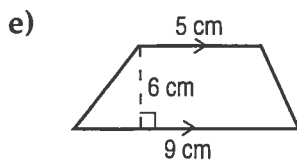
$$= \quad \times \quad$$

$$= \quad$$

Formula

Substitute

Multiply



$$A = \frac{1}{2}(a + b)h$$

$$= \frac{1}{2}(5 + 9) \times 6$$

$$= \frac{1}{2}(\quad) \times 6$$

$$= \frac{1}{2}(\quad)$$

$$= \quad$$

Formula

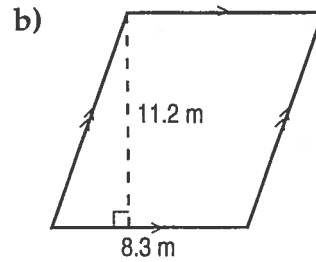
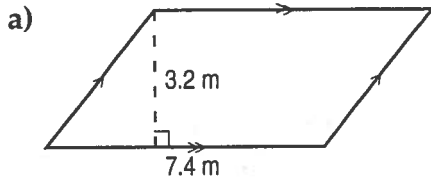
Substitute

Do brackets

Multiply

Divide by 2

2. Calculate each area. Round your answer to the nearest square centimetre or square metre.



$$A = b \times h$$

Formula

$$= \text{ \_\_\_\_\_\_ } \times \text{ \_\_\_\_\_\_ }$$

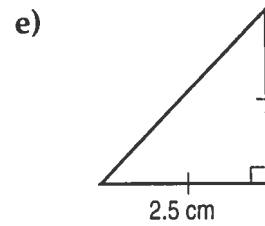
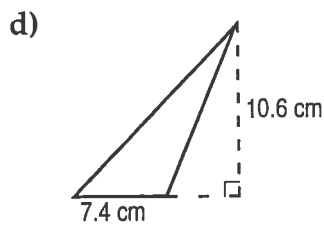
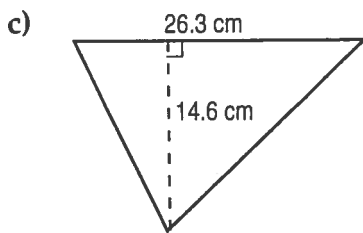
Substitute

$$= \text{ \_\_\_\_\_\_ }$$

Multiply

$$\doteq \text{ \_\_\_\_\_\_ } \text{ m}^2$$

Round answer.



$$A = \frac{b \times h}{2}$$

$$= \frac{\text{ \_\_\_\_\_\_ } \times \text{ \_\_\_\_\_\_ }}{2}$$

$$= \frac{\text{ \_\_\_\_\_\_ }}{2}$$

← Divide by 2.

$$= \text{ \_\_\_\_\_\_ }$$

Round answer.

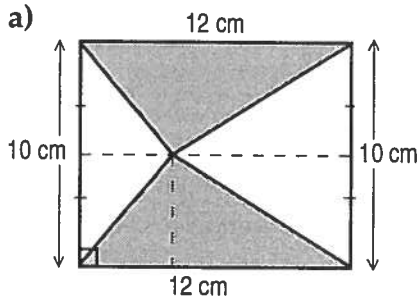
$$\doteq \text{ \_\_\_\_\_\_ } \text{ cm}^2$$





## Problems and Applications

3. Calculate the area of the shaded region in each diagram.



**Second:** Calculate the area of one shaded  $\Delta$ .

Formula

Substitute

Calculate

**First:** Find height of shaded  $\Delta$ .

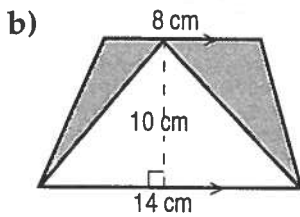
$$h = \frac{\square}{2}$$

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

**Third:** Find area of shaded region.

$$\text{Area of shaded region} = 2 \times \text{Area of } \Delta$$

Sentence: \_\_\_\_\_



**Second:** Calculate the area of white  $\Delta$ .

Formula

Substitute

Calculate

**First:** Find area of trapezoid.

**Third:** Find area of shaded region.

$$\text{Area of shaded region} = \text{Area of } \square - \text{Area of } \Delta$$

Sentence: \_\_\_\_\_

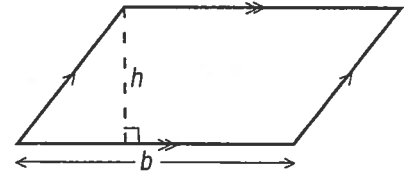
4. The area of a parallelogram is  $8400 \text{ cm}^2$ . Its height is  $60 \text{ cm}$ .  
What is the measure of the base?



Formula

Substitute

Divide each side by 60.



Sentence: \_\_\_\_\_

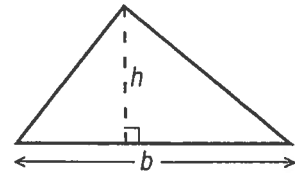
5. The area of a triangle is  $14 \text{ cm}^2$  and the base is  $7 \text{ cm}$ . What is its height?

Formula

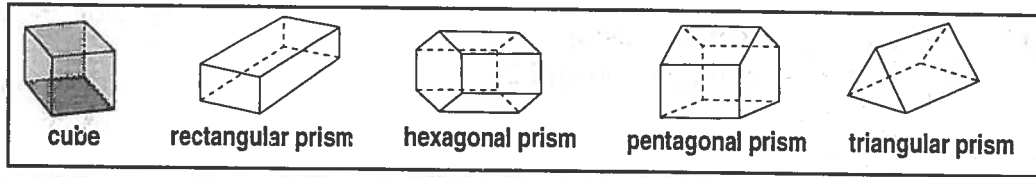
Substitute

Cross multiply

Divide each side by 7.

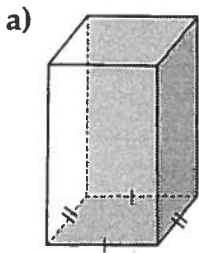


## 7.3 Surface Area and Volume of a Prism



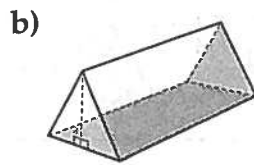
### Practice

1. Name each prism.



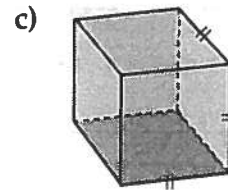
\_\_\_\_\_

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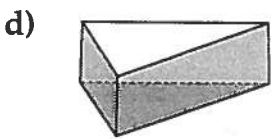


\_\_\_\_\_

\_\_\_\_\_

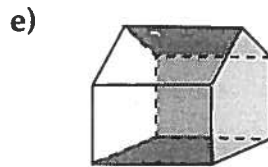


\_\_\_\_\_



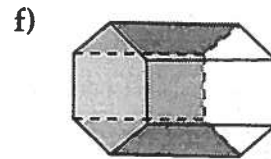
\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_

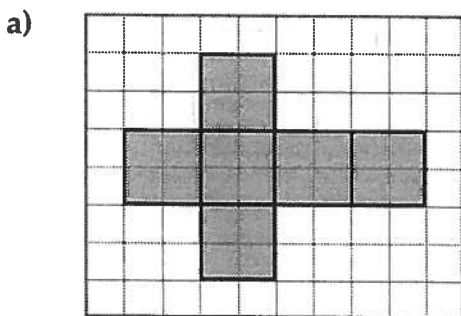
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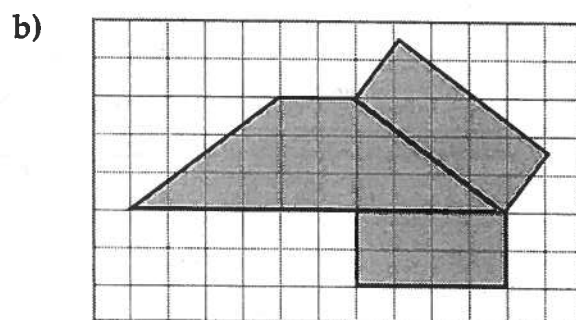
\_\_\_\_\_

2. Which prism can be formed from each net?



\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_

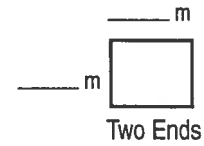
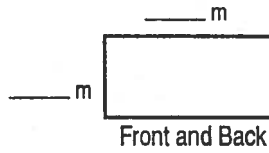
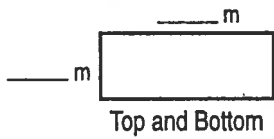
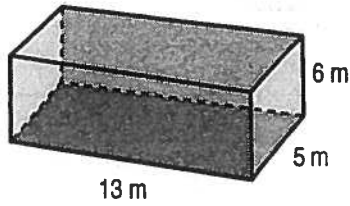
\_\_\_\_\_

3. Calculate the surface area of each prism.

The surface area of the prism is the sum of the areas of the faces.



a)



$$A = l \times w$$

$$= \text{---} \times \text{---}$$

$$= \text{---} \text{ m}^2$$

$$A = \text{---}$$

$$= \text{---}$$

$$= \text{---}$$

$$A = \text{---}$$

$$= \text{---}$$

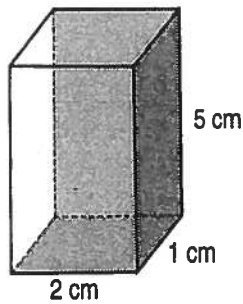
$$= \text{---}$$



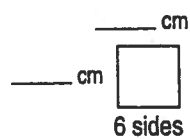
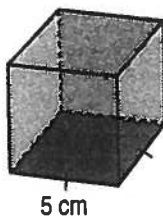
Front and Back:	$2 \times \text{---}$	$= \text{---}$
Top and Bottom:	$2 \times \text{---}$	$= \text{---}$
Two Ends:	$2 \times \text{---}$	$= \text{---}$
Total Surface Area = $\text{---}$		



b)

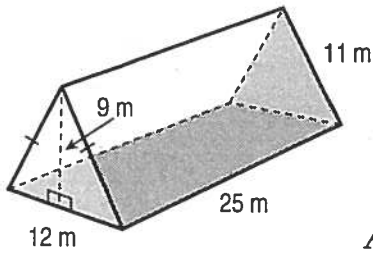


c)

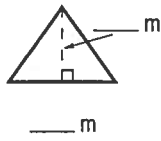


4. Calculate the surface area of each triangular prism.

a)



Two Ends



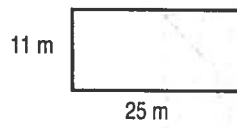
$$A = \frac{b \times h}{2}$$

$$= \frac{\square \times \square}{2}$$

$$= \frac{\square}{2}$$

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

Front and Back

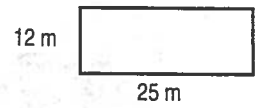


$$A = lw$$

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

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

Bottom



$$A = lw$$

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

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



Two Ends:  $2 \times \square = \underline{\hspace{2cm}}$

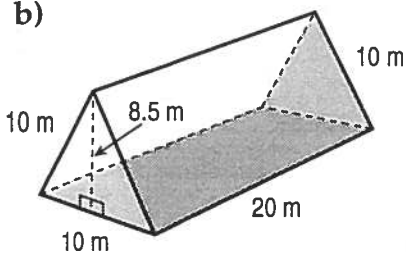
Front and Back:  $2 \times \square = \underline{\hspace{2cm}}$

Bottom:  $\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

---

Total Surface Area =  $\underline{\hspace{2cm}}$

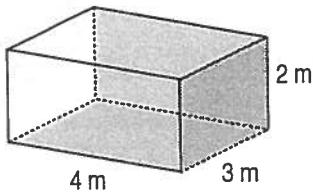
b)



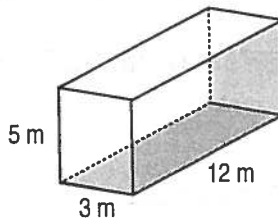
5. Calculate the volume of each rectangular prism.

$$V = lwh$$

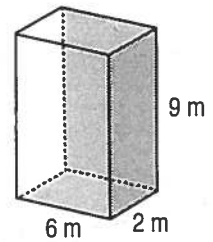
a)



b)



c)



$$V = lwh$$

Formula

$$= \_ \times \_ \times \_$$

Substitute

$$= \_ \text{ m}^3$$

Multiply

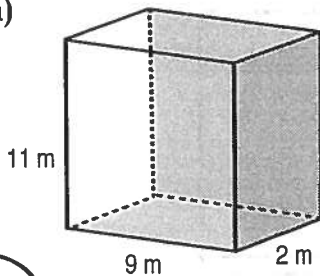


6. Calculate the volume of each prism to the nearest cubic unit.

$$V = B \times h$$

Area of base      height

a)



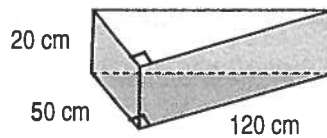
$$V = B \times h$$

$$= l \times w \times h$$

$$= \_ \times \_ \times \_$$

$$= \_ \text{ m}^3$$

b)



$$V = B \times h$$

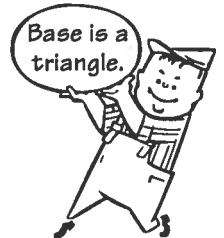
$$= \left( \frac{b \times h}{2} \right) \times h$$

$$= \left( \frac{50 \times \square}{2} \right) \times 20$$

$$= \frac{\square}{2} \times 20$$

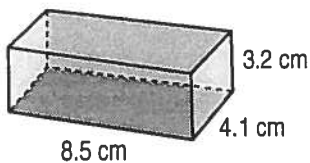
$$= \_ \times 20$$

$$= \_$$

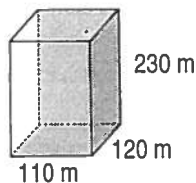


Divide by 2.

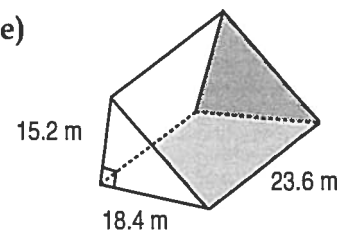
c)



d)



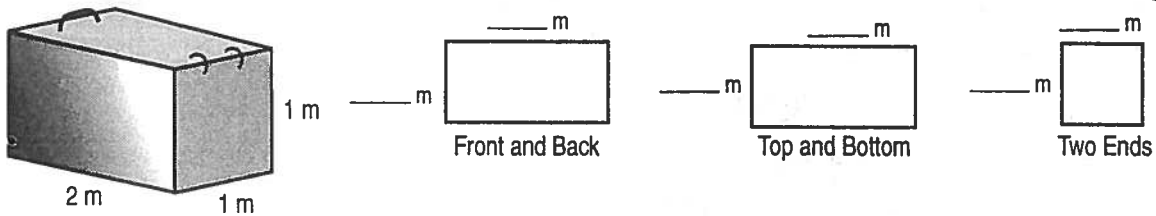
e)



## Problems and Applications

7. A covered garbage bin is to be built so that it measures 2 m by 1 m by 1 m.

a) How much plywood would it take to build the garbage bin?



Front and Back:	$2 \times \boxed{\phantom{00}} = \underline{\phantom{00}}$
Top and Bottom:	$\phantom{2} \times \phantom{00} = \underline{\phantom{00}}$
Two Ends:	$\phantom{2} \times \phantom{00} = \underline{\phantom{00}}$
<hr/> Total Surface Area = <span style="border: 1px solid black; display: inline-block; width: 100px; height: 20px; vertical-align: middle;"></span>	

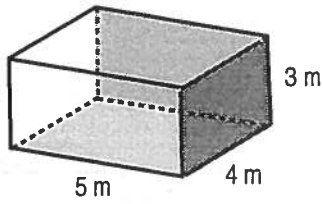
Sentence: \_\_\_\_\_

b) How many cubic metres of garbage will it hold?



\_\_\_\_\_

8. a) Calculate the surface area of this room.

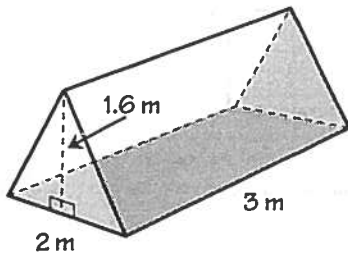


Sentence: \_\_\_\_\_

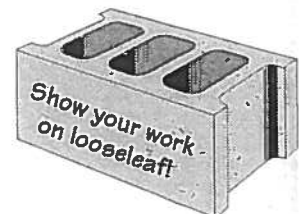
- b) One 4-L can of paint will cover  $36 \text{ m}^2$ . How many 4-L cans of paint will you need to paint this room?



9. How many cubic metres of air does the tent contain?

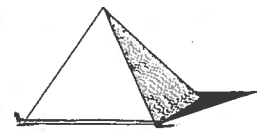


10. Work with a partner to calculate the surface area and volume of the interior of your classroom.





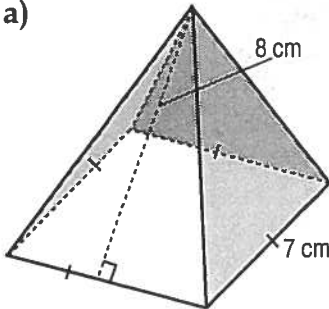
# 7.4 Surface Area and Volume of a Pyramid



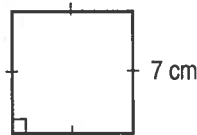
## Practice

1. Calculate each surface area.

a)



Find Area of Base.

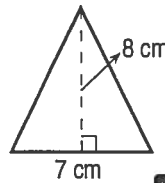


$$A = s^2$$

$$= 7 \times 7$$

$$= \boxed{\phantom{00}} \text{ cm}^2$$

Find Area of 4 Triangular Faces.



$$A = \frac{b \times h}{2} \times 4$$

$$= \frac{7 \times 8}{2} \times 4$$



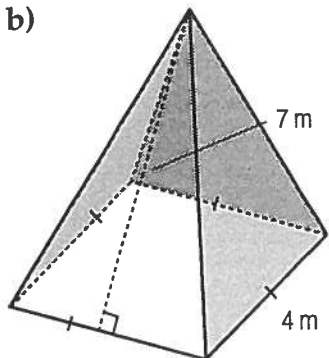
Press  $\boxed{C} \boxed{7} \boxed{\times} \boxed{8} \boxed{\div} \boxed{2} \boxed{\times} \boxed{4}$

$$= \boxed{\phantom{00}} \text{ cm}^2$$

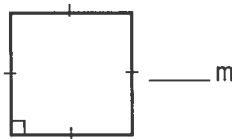
$$\text{Total Surface Area} = \boxed{\phantom{00}} + \boxed{\phantom{00}}$$

$$= \underline{\hspace{2cm}} \text{ cm}^2$$

b)

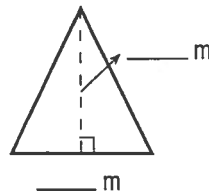


Find Area of Base.



$$A =$$

Find Area of 4 Triangular Faces.

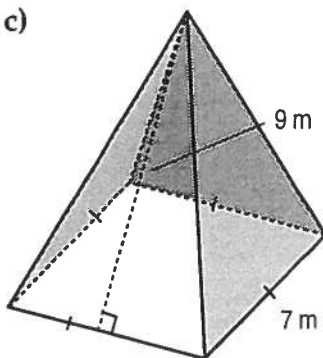


$$A =$$

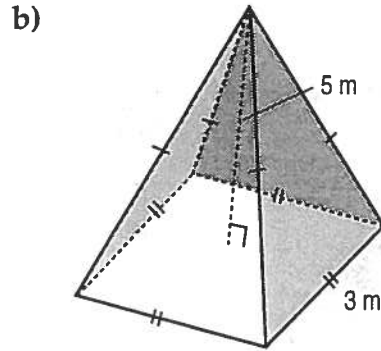
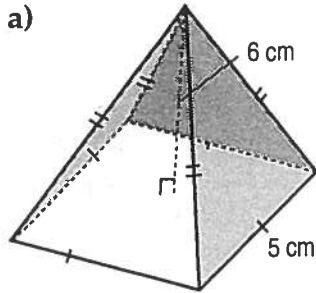
$$\text{Total Surface Area} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

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

c)



2. Calculate each volume to the nearest cubic unit.



$$V = \frac{1}{3} \times B \times h$$

Formula

$$= \frac{1}{3} \times s^2 \times h$$

Base is a square.  
Use  $B = s^2$ .

$$= \frac{1}{3} \times 5 \times 5 \times 6$$

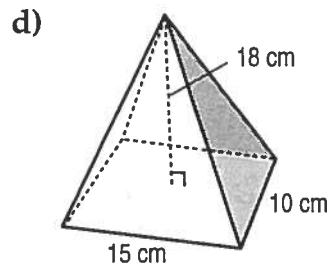
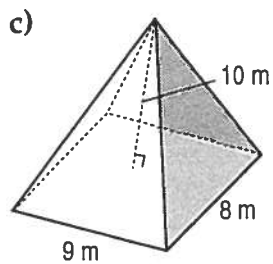
Substitute

$$= \frac{\quad}{3}$$

Multiply numerators.

$$= \quad \text{cm}^3$$

Divide by 3.



$$V = \frac{1}{3} \times B \times h$$

Formula

$$= \frac{1}{3} \times l \times w \times h$$

Base is a rectangle.  
 $B = l \times w$

=

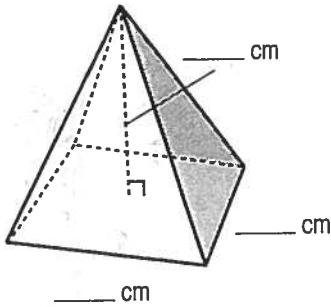
Substitute

Multiply numerators.

Divide by 3.

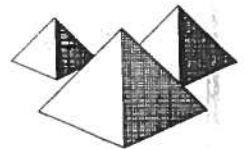
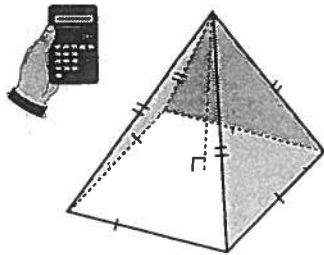
## Problems and Applications

3. The rectangular base of a pyramid measures 10 cm by 9 cm. The height of the pyramid is 12 cm. Calculate its volume.



Sentence: \_\_\_\_\_

4. The length of one side of the base of the Great Pyramid is 230 m, and the height is 146 m. What is its volume?

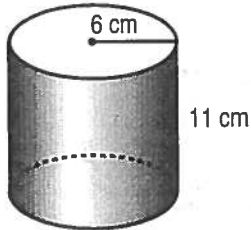


# 7.5 Surface Area and Volume of a Cylinder and a Cone

## Practice

1. Calculate the surface area of each cylinder. Round your answer to the nearest square centimetre.

a)

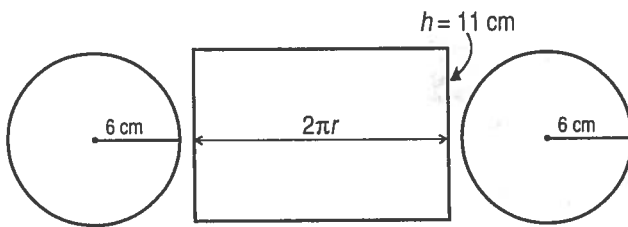
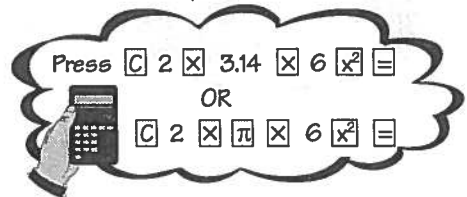


Formula

$$\text{Surface Area} = 2\pi r^2 + 2\pi rh$$

Substitute

$$= 2(3.14)(6)^2 + 2(3.14)(6)(\square)$$



Multiply

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

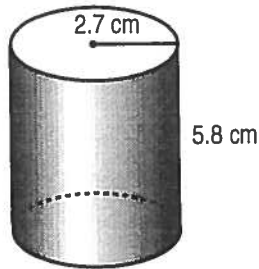
Add

$$= \underline{\hspace{2cm}} \text{ cm}^2$$

Round your answer to nearest whole number.

$$\hat{=} \underline{\hspace{2cm}}$$

b)

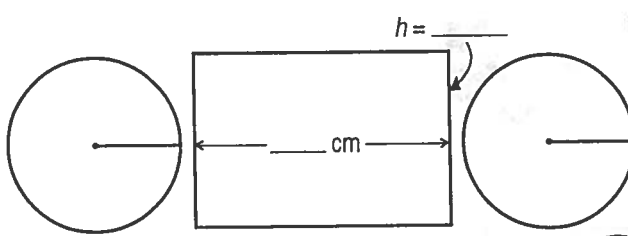


Formula

Substitute

Multiply

Add



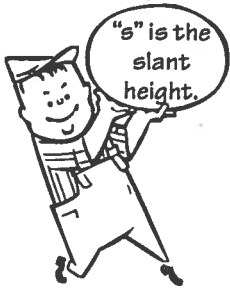
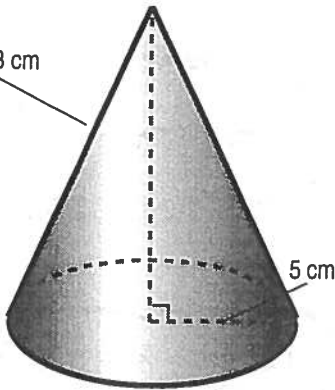
Round your answer to nearest whole number.



2. Calculate the surface area of each cone. Round your answer to the nearest square centimetre.

a)

$s = 13$  cm

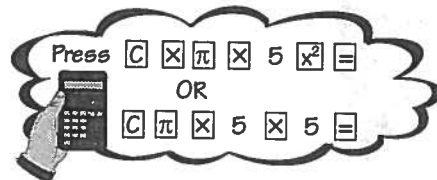


Formula

$$\text{Surface Area} = \pi r^2 + \pi r s$$

Substitute

$$= (3.14)(5)^2 + (3.14)(5)(\square)$$



Multiply



$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Add

$$= \underline{\hspace{2cm}} \text{ cm}^2$$

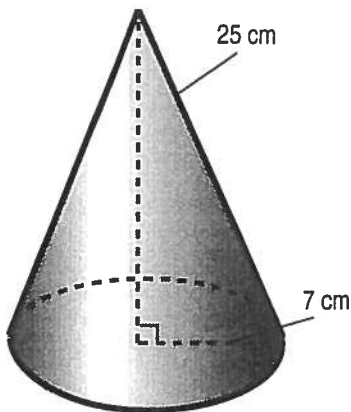
Round your answer to nearest whole number.

$$\approx \underline{\hspace{2cm}}$$



b)

25 cm



Formula

Substitute

Multiply

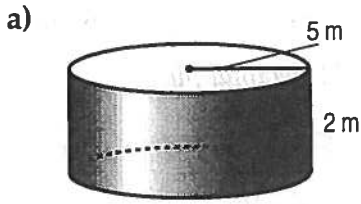


Add

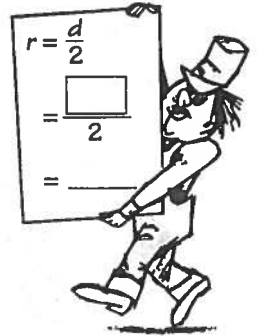
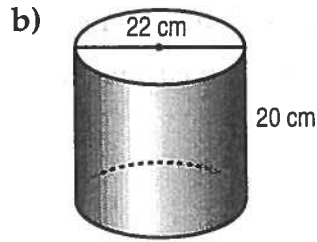
Round your answer to nearest whole number.



3. Calculate the **volume** of each cylinder.



Base is a circle.



$$V = (\text{Area of Base})(\text{height})$$

$$= \pi r^2 h$$

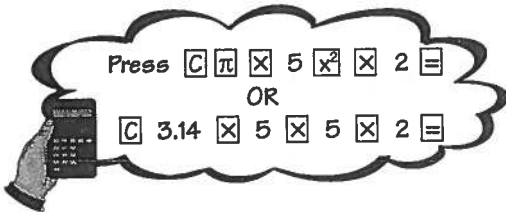
Formula

$$\doteq (3.14)(5)^2(\square)$$

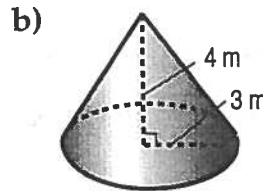
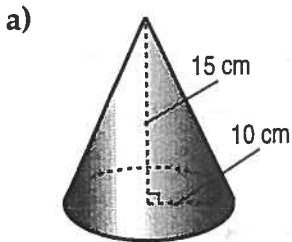
Substitute

$$\doteq \underline{\hspace{2cm}} \text{ m}^3$$

Calculate



4. Calculate the **volume** of each cone.



$$V = \frac{1}{3}(\text{Area of Base})(\text{height})$$

$$= \frac{1}{3}(\pi r^2)(h)$$

Formula

$$\doteq \frac{3.14(10)^2(\square)}{3}$$

Substitute

$$\doteq \frac{\square}{3}$$

Multiply

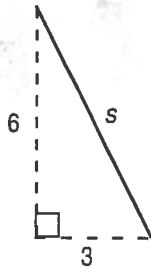
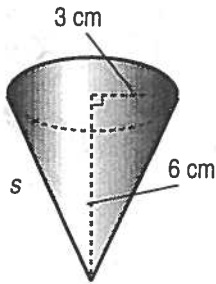
$$\doteq \underline{\hspace{2cm}}$$

Divide by 3.

## Problems and Applications

5. A paper cup has a conical shape. The radius of the cup is 3 cm and its height is 6 cm.

a) Find the slant height. Round your answer to the nearest tenth (1 decimal place).



$$c^2 = a^2 + b^2$$

Pythagorean Theorem

$$s^2 = \square^2 + \square^2$$

Substitute

$$= \underline{\quad} + \underline{\quad}$$

Square each number.

$$= \underline{\quad}$$

Add

$$s = \sqrt{\underline{\quad}}$$

Find  $\sqrt{\quad}$ .

$$= \square \text{ cm}$$

Sentence: \_\_\_\_\_

b) Calculate how much paper is needed to make the cup. Round your answer to the nearest square centimetre.



$$\text{Surface Area of cup} = \pi r s$$

$$= \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$

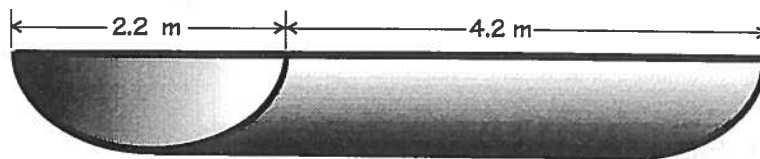
Substitute

$$= \underline{\quad}$$

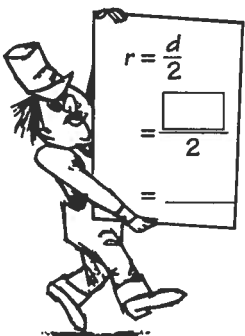
Multiply

Sentence: \_\_\_\_\_

6. A hobby club runs remote-controlled boats in a tank that is in a semi-cylinder shape as shown below.



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



**First:** Find volume of cylinder.

$$V = \pi r^2 h$$

**Second:** Divide volume by 2.

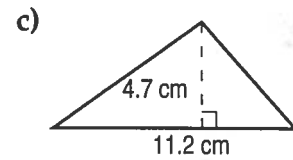
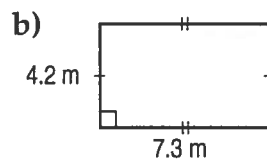
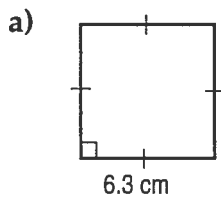
Sentence: \_\_\_\_\_

# Review



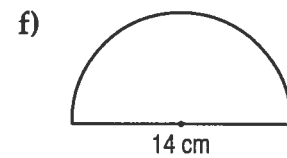
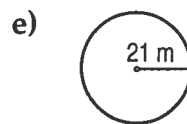
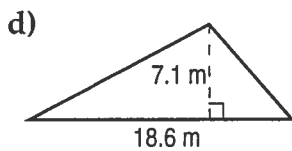
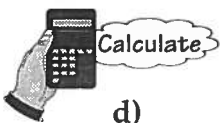
1. Calculate each area.

<p><b>Square</b></p> <p><math>A = s^2</math></p>	<p><b>Rectangle</b></p> <p><math>A = lw</math></p>	<p><b>Circle</b></p> <p><math>A = \pi r^2</math></p>	<p><b>Triangle</b></p> <p><math>A = \frac{bh}{2}</math></p>	<p><b>Parallelogram</b></p> <p><math>A = b \times h</math></p>	<p><b>Trapezoid</b></p> <p><math>A = \frac{1}{2} (a + b)h</math></p>
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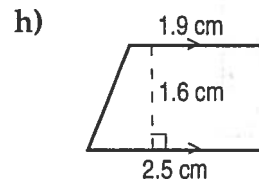
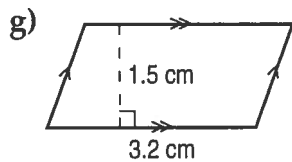


Formula

Substitute



Divide area of circle by 2.



Formula

Substitute

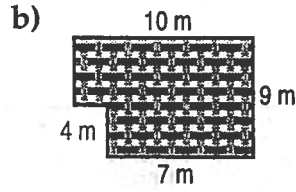
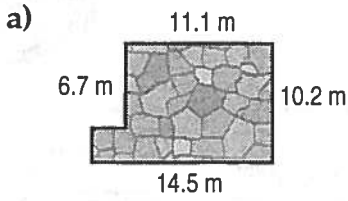
Add a + b.

Multiply

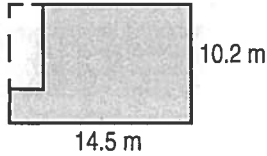
Divide by 2.



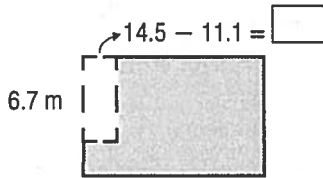
2. Calculate the area of each shape.



**First:** Calculate area of large rectangle.



**Second:** Calculate area of small rectangle.

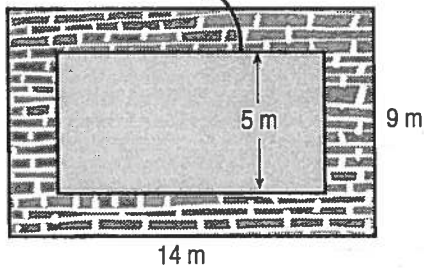


**Third:** Subtract areas.

3. a) Calculate the area of the sidewalk around the rectangular garden. The width of the sidewalk is 2 m.

Area of Sidewalk = Area of Large Rectangle - Area of Small Rectangle

$14 - [ ] = [ ] \text{ m}$



Sentence: \_\_\_\_\_

b) What is the area of the garden?

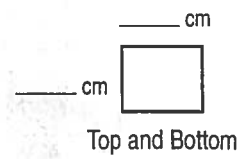
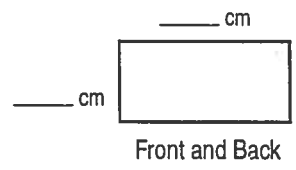
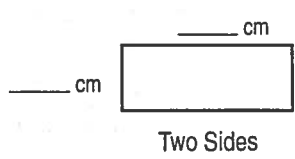
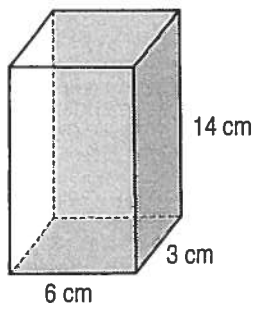
c) Landscape fabric costs  $\$0.99/\text{m}^2$ . What is the total cost of covering the garden?

Sentence: \_\_\_\_\_

Sentence: \_\_\_\_\_

4. Calculate the surface area.

a)



$$A = lw$$

$$= \text{___} \times \text{___}$$

$$= \text{___}$$

Two Sides:  $2 \times \text{[ ]} = \text{_____}$

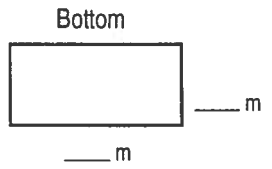
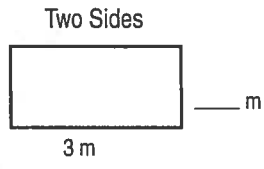
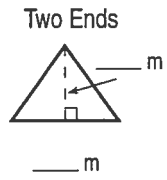
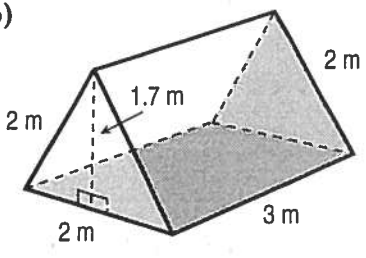
Top and Bottom:  $2 \times \text{[ ]} = \text{_____}$

Front and Back:  $2 \times \text{[ ]} = \text{_____}$

---

Total Surface Area = \_\_\_\_\_

b)



$$A = \frac{b \times h}{2}$$

$$= \frac{\text{[ ]} \times \text{[ ]}}{2}$$

$$= \frac{\text{[ ]}}{2}$$

$$= \text{_____}$$

$$A = lw$$

$$= \text{___} \times \text{___}$$

$$= \text{_____}$$

$$A = lw$$

$$= \text{___} \times \text{___}$$

$$= \text{_____}$$

Total Surface Area

Two Ends:  $2 \times \text{[ ]} = \text{_____}$

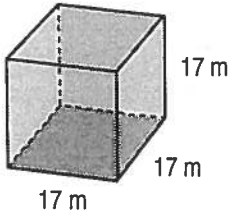
Two Sides:  $2 \times \text{[ ]} = \text{_____}$

Bottom:  $\text{[ ]} = \text{_____}$

---

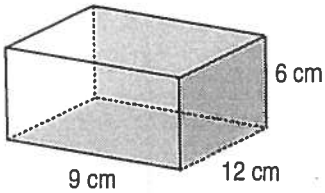
Total Surface Area = \_\_\_\_\_

5. Calculate the surface area of the cube.



6. Calculate the volume.

a)



$$V = \text{Area of Base} \times \text{height}$$

$$= lwh$$

$$= \_ \times \_ \times \_$$

$$= \_$$

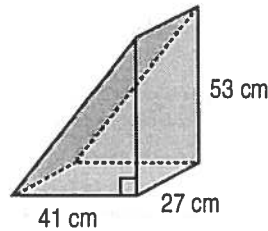
Formula

Substitute

Multiply

Divide by 2.

b)

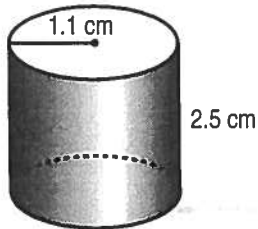


Base is a  $\Delta$ .  
 $A = \frac{b \times h}{2}$

$$V = \text{Area of Base} \times \text{height}$$

7. Calculate the surface area (SA).

a)



$$SA = 2\pi r^2 + 2\pi rh$$

Formula

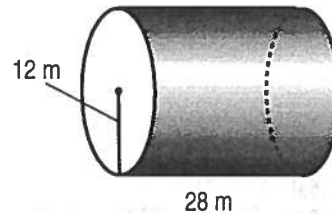
Substitute

Multiply

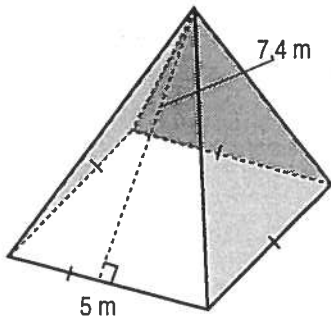
Add



b)



8. Calculate the surface area of the square pyramid.



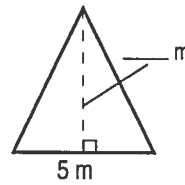
Base

$$A = s^2$$

$$= \square^2$$

$$= \text{_____ m}^2$$

4 Triangular Faces



$$A = 4 \times \left( \frac{b \times h}{2} \right)$$

$$= \frac{4 \times \square \times \square}{2}$$

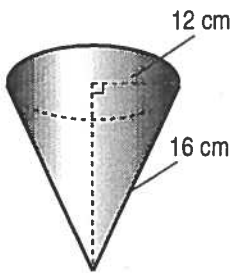
$$= \text{_____ m}^2$$

Total Surface Area = Area of Base + Area of 4 Faces

$$= \text{_____} + \text{_____}$$

$$= \text{_____}$$

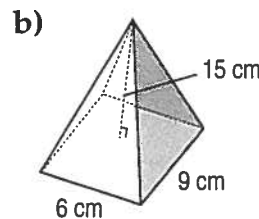
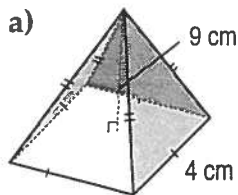
9. Calculate the surface area of the cone.



Surface Area =  $\pi r^2 + \pi rs$

- Substitute
- Multiply
- Add

10. Calculate the volume.



$V = \text{Area of Base} \times \text{height}$



$$V = \frac{1}{3} \times \text{Area of Base} \times h$$

$$= \frac{1}{3} \times s^2 \times h$$

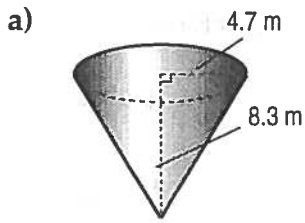
$$=$$

$$=$$

- Formula
- Substitute
- Calculate

$$V = \frac{1}{3} \times \text{Area of B} \times h$$

11. Calculate the volume to the nearest cubic unit.

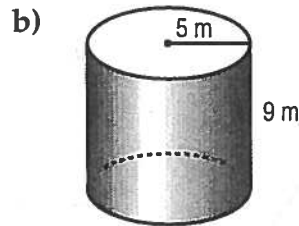


$$V = \frac{1}{3} \pi r^2 h$$

Formula

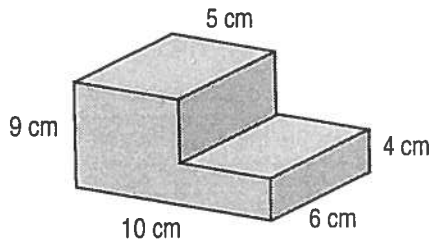
Substitute

Calculate

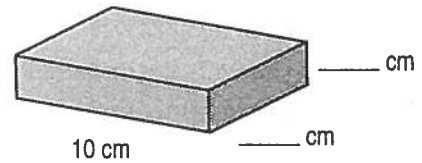
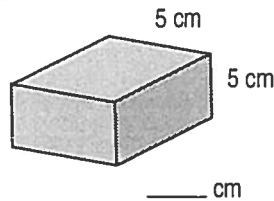


$$V = \pi r^2 h$$

12. Calculate the volume of the composite solid.



**First:** Divide into 2 solids.



**Second:** Find the volume of each solid. }

$$V_1 = lwh$$

$$V_2 =$$

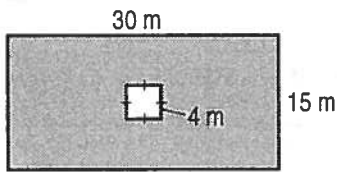
**Third:** Find total volume.

$$\text{Total volume} = V_1 + V_2$$

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{4cm}}$$

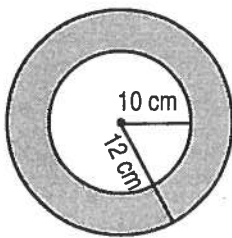
13. A 4-m square is removed from the centre of a 15-m by 30-m rectangle. What is the area of the remaining part?



Area of remaining part  
= Area of rectangle  
- Area of square

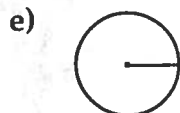
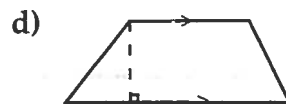
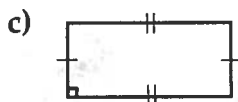
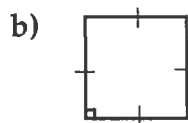


14. Find the area of the shaded region.



Area of shaded region = Area of large circle - Area of small circle

15. Below each figure write the formula that could be used to find its area.



Clues:

$$A = s^2 \quad A = \frac{1}{2}(a + b)h$$

$$A = \frac{bh}{2} \quad A = bh$$

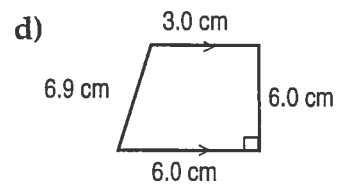
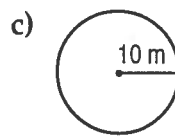
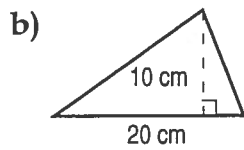
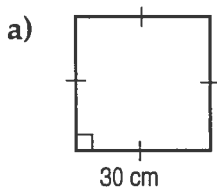
$$A = \pi r^2 \quad A = lw$$

# Chapter Check



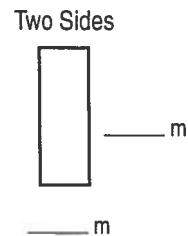
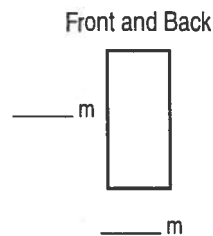
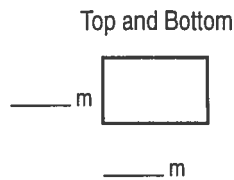
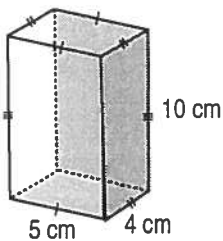
1. Calculate the area.

<p><b>Square</b></p> <p><math>A = s^2</math></p>	<p><b>Circle</b></p> <p><math>A = \pi r^2</math></p>	<p><b>Triangle</b></p> <p><math>A = \frac{bh}{2}</math></p>	<p><b>Trapezoid</b></p> <p><math>A = \frac{1}{2}(a + b)h</math></p>
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- Formula
- Substitute
- Calculate

2. Calculate the surface area of the rectangular prism.



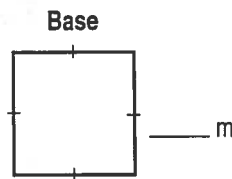
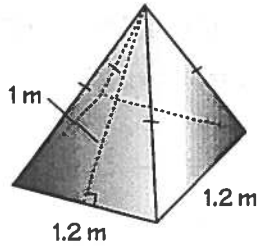
Find Area of ends and faces.

Top and Bottom:	$2 \times$	<input type="text"/>	$=$	_____
Front and Back:	$2 \times$	<input type="text"/>	$=$	_____
Two Sides:	$2 \times$	<input type="text"/>	$=$	_____
Total Surface Area = _____				

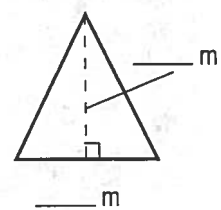


3. Calculate the surface area to the nearest square unit.

a)



4 Triangular Faces



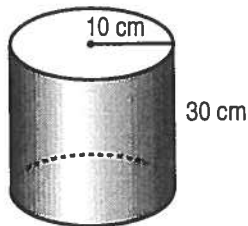
Find Area of base and faces.

Total Surface Area = Area of Base + Area of 4 Triangular Faces

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

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

b)

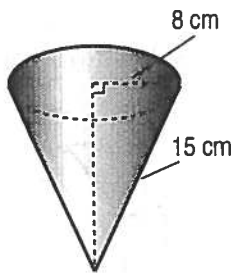


$$\text{Surface Area} = 2\pi r^2 + 2\pi r h$$

Substitute

Calculate

c)



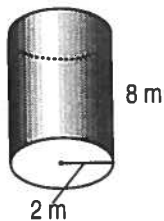
$$\text{Surface Area} = \pi r^2 + \pi r s$$

Substitute

Calculate

4. Calculate the volume to the nearest cubic unit.

a)



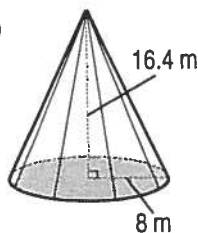
$$V = \pi r^2 h$$

Formula

Substitute

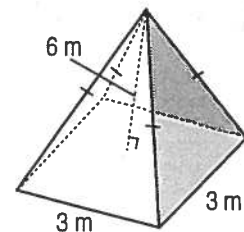
Calculate

b)



$$V = \frac{1}{3} \pi r^2 h$$

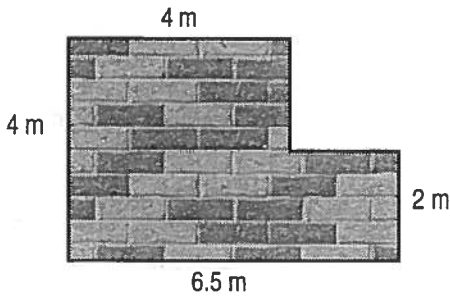
c)



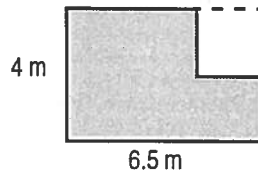
$$V = \frac{1}{3} (s^2) h$$



5. Find the area of the patio.



**First:** Calculate area of large rectangle.

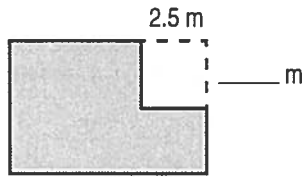


$$A = l \times w$$

$$= \text{---} \times \text{---}$$

$$= \text{---}$$

**Second:** Calculate area of small rectangle.



$$A = l \times w$$

$$= \text{---} \times \text{---}$$

$$= \text{---}$$

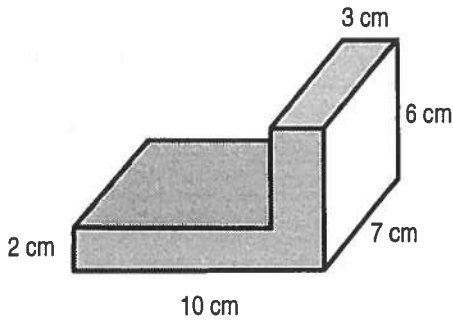
**Third:** Area of patio = Area of large rectangle – Area of small rectangle

$$= \text{---} - \text{---}$$

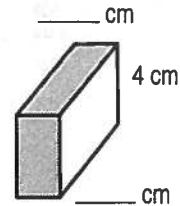
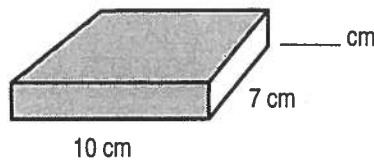
$$= \text{---}$$

Sentence: \_\_\_\_\_

6. Find the volume of the composite solid.



**First:** Divide the solid into two rectangular prisms.



**Second:** Find the volume of each solid.

$$V = lwh$$

**Third:** Add volumes.

Sentence: \_\_\_\_\_