

## Curriculum Outcome

(N5) Determine the square root of positive rational numbers that are perfect squares.

(N6) Determine an approximate square root of positive rational numbers that are non-perfect squares.

(SS2) Determine the surface area of composite 3-D objects to solve problems

(N4) \*\*Explain and apply the order of operations, including exponents, with and without technology.\*\*

**Get homework out!!!**

**Detention Comment**

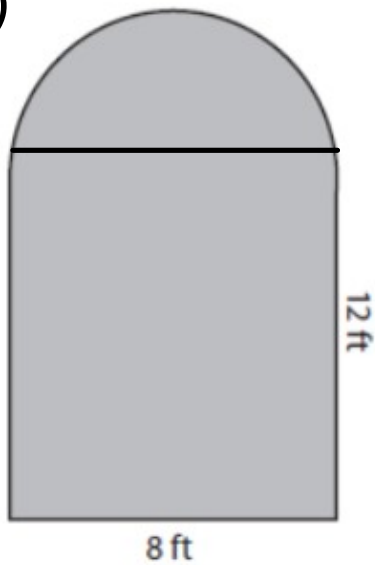
-Homework not completed for today even though I knew there was going to be a homework check, and I chose not to attend math help yesterday to get it done.

# Warm Up

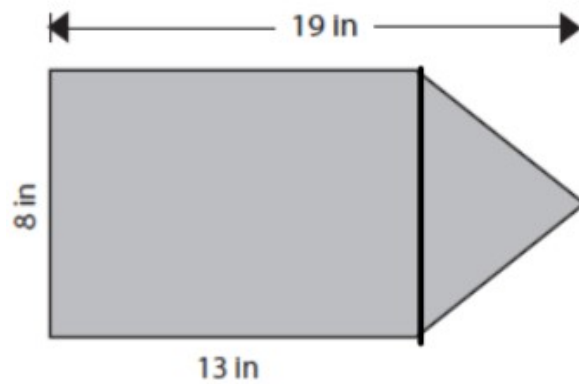


What is the surface area of each shape?

a)



b)

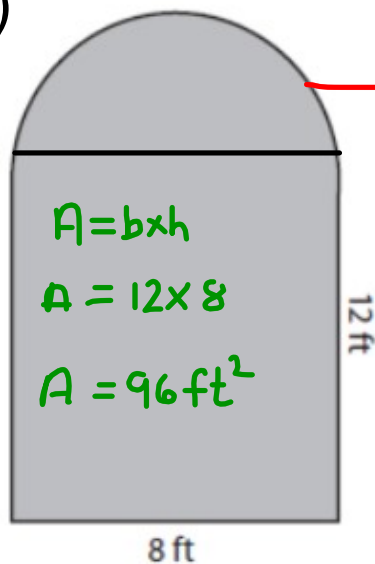


# Warm Up



What is the surface area of each shape?

a)



$$A = \frac{\pi r^2}{2}$$

$$A = \frac{3.14(4)^2}{2}$$

$$A = \frac{3.14(16)}{2}$$

$$A = 25.12 \text{ ft}^2$$

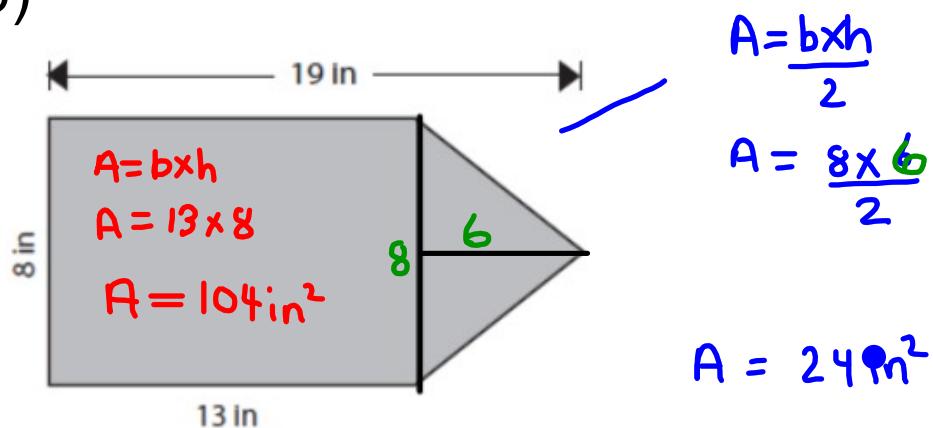
$$\begin{aligned} \text{TSA} &= 96 + 25.12 \\ &= 121.12 \text{ ft}^2 \end{aligned}$$

# Warm Up



What is the surface area of each shape?

b)

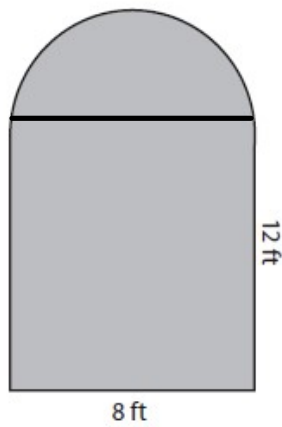


$$\begin{aligned}
 T_{SA} &= 104 + 24 \\
 &= 128 \text{ in}^2
 \end{aligned}$$

**Answer Key**

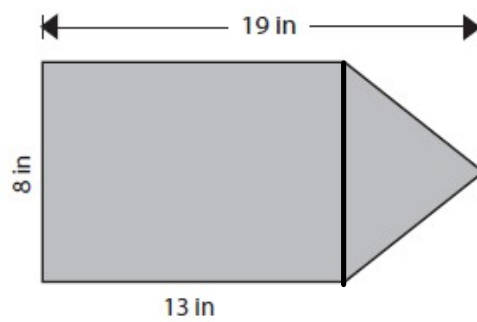
Find the area of each figure. Round the answer to 2 decimal places if necessary.

1)



Area = 121.12 ft<sup>2</sup>

2)

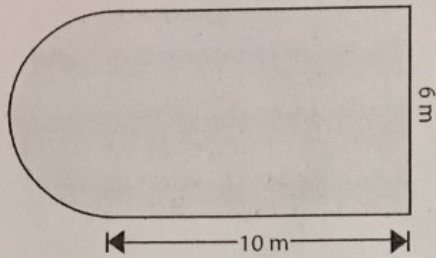


Area = 128 in<sup>2</sup>

Area - Compound Shapes

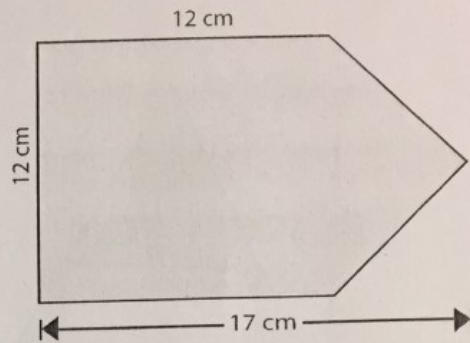
Find the area of each figure. Round the answer to 2 decimal places if necessary.

1)



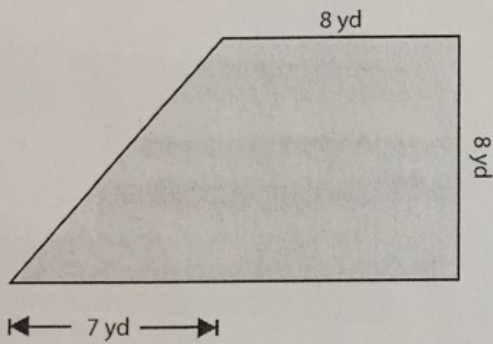
Area = 74.13 m<sup>2</sup>

2)



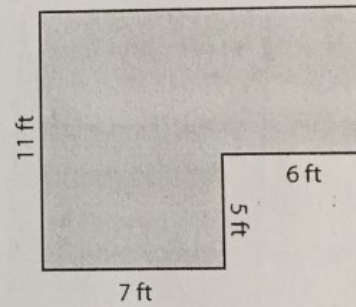
Area = 174 cm<sup>2</sup>

3)



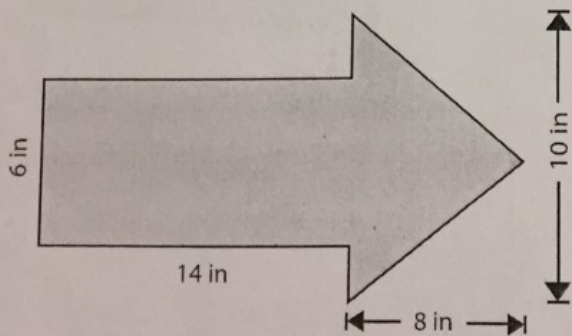
Area = 92 yd<sup>2</sup>

4)



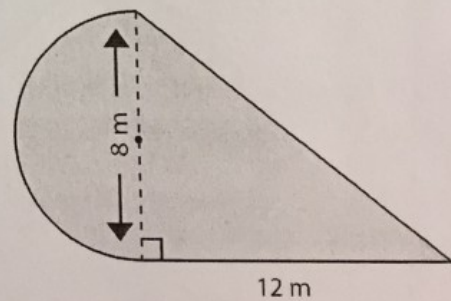
Area = 113 ft<sup>2</sup>

5)



Area = 124 in<sup>2</sup>

6)



Area = 73.12 m<sup>2</sup>

Find the area of each figure. Round the answer to 2 decimal places if necessary.

1)

$A = \frac{\pi r^2}{2}$   
 $A = \frac{\pi (3)^2}{2}$   
 $A = \frac{\pi (9)}{2}$   
 $A = 14.13 \text{ m}^2$

$A = b \times h$   
 $A = 6 \times 10$   
 $A = 60 \text{ m}^2$

$TSA = 60 + 14.13 \text{ m}^2$   
 Area = 74.13 m<sup>2</sup>

2)

$A = b \times h$   
 $A = 12 \times 12$   
 $A = 144 \text{ cm}^2$

$A = \frac{b \times h}{2}$   
 $A = \frac{12 \times 5}{2}$   
 $A = 30 \text{ cm}^2$

$TSA = 144 + 30$   
 Area = 174 cm<sup>2</sup>

3)

$A = \frac{b \times h}{2}$   
 $A = \frac{7 \times 8}{2}$   
 $A = 28 \text{ yd}^2$

$A = b \times h$   
 $A = 8 \times 8$   
 $A = 64 \text{ yd}^2$

$TSA = 28 + 64$   
 Area = 92 yd<sup>2</sup>

4)

$A = b \times h$   
 $A = 11 \times 7$   
 $A = 77 \text{ ft}^2$

$A = b \times h$   
 $A = 6 \times 6$   
 $A = 36$

$TSA = 77 + 36$   
 Area = 113 ft<sup>2</sup>

5)

$A = b \times h$   
 $A = 14 \times 6$   
 $A = 84 \text{ in}^2$

$A = \frac{b \times h}{2}$   
 $A = \frac{10 \times 8}{2}$   
 $A = 40$

$TSA = 84 + 40$

6)

$A = \pi r^2$   
 $A = \pi (4)^2$   
 $A = \frac{50.24}{2}$   
 $A = 25.12$

$A = \frac{b \times h}{2}$   
 $A = \frac{12 \times 8}{2}$   
 $A = 48$

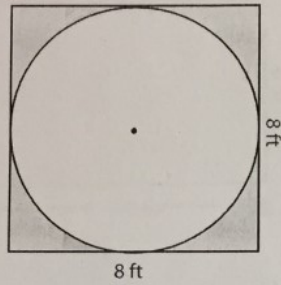
$TSA = 25.12 + 48$   
 Area = 73.12 m<sup>2</sup>



**Area - Compound Shapes**

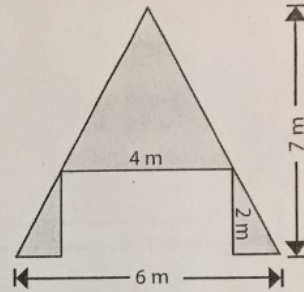
Find the area of shaded region. Round the answer to 2 decimal places if necessary.

1)



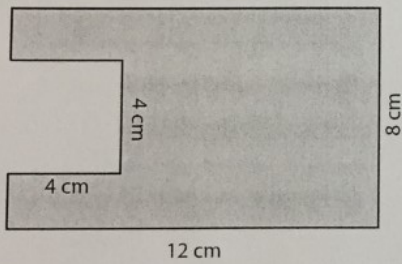
Area = 13.76 ft<sup>2</sup>

2)



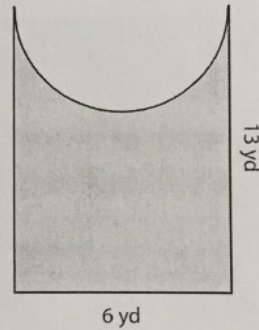
Area = 13 m<sup>2</sup>

3)



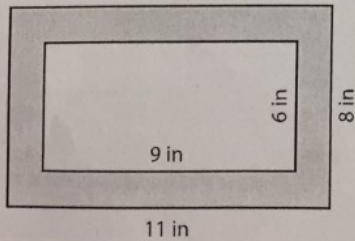
Area = 80 cm<sup>2</sup>

4)



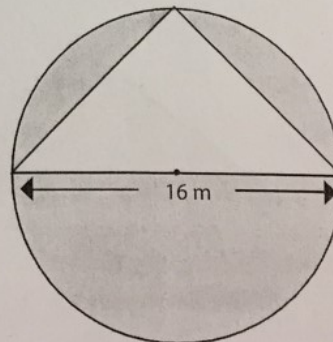
Area = 63.87 yd<sup>2</sup>

5)



Area = 34 in<sup>2</sup>

6)



Area = 136.96 m<sup>2</sup>

Find the area of shaded region. Round the answer to 2 decimal places if necessary.

1)

$A = b \times h$   
 $A = 8 \times 8$   
 $A = 64 \text{ ft}^2$

$A = \pi r^2$   
 $A = \pi(4)^2$   
 $A = 50.24$

$TSA = 64 - 50.24$   
 Area = 13.76 ft<sup>2</sup>

2)

$A = \frac{b \times h}{2}$   
 $A = \frac{6 \times 7}{2}$   
 $A = 21$

$A = b \times h$   
 $A = 4 \times 2$   
 $A = 8$

$TSA = 21 - 8$   
 Area = 13 m<sup>2</sup>

3)

$A = b \times h$   
 $A = 8 \times 12$   
 $A = 96 \text{ cm}^2$

$A = b \times h$   
 $A = 4 \times 4$   
 $A = 16$

$TSA = 96 - 16$   
 Area = 80 cm<sup>2</sup>

4)

$A = \frac{\pi r^2}{2} = \frac{\pi(3)^2}{2}$   
 $A = 14.13$

$A = b \times h$   
 $A = 6 \times 13$   
 $A = 78 \text{ yd}^2$

$TSA = 78 - 14.13$   
 Area = 63.87 yd<sup>2</sup>

5)

$A = b \times h$   
 $A = 11 \times 8$   
 $A = 88 \text{ in}^2$

$A = b \times h$   
 $A = 9 \times 6$   
 $A = 54 \text{ in}^2$

$TSA = 88 - 54$   
 Area = 34 in<sup>2</sup>

6)

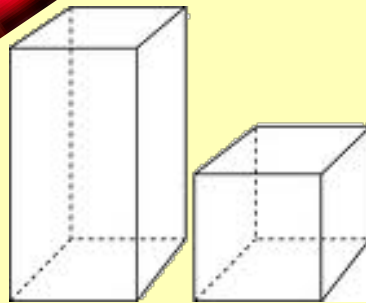
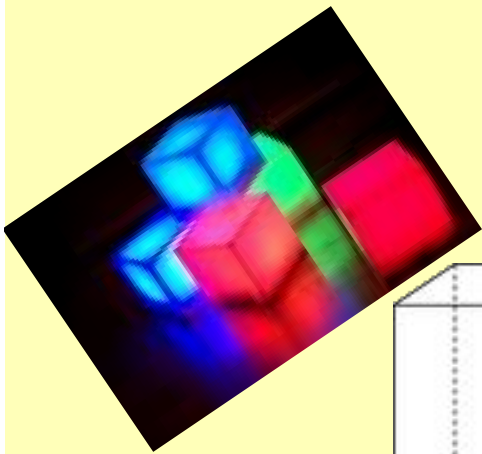
$A = \frac{b \times h}{2}$   
 $A = \frac{16 \times 8}{2}$   
 $A = \frac{128}{2}$   
 $A = 64 \text{ m}^2$

$A = \pi r^2$   
 $A = \pi(8)^2$   
 $A = 200.96$

$TSA = 200.96 - 64$   
 Area = 136.96 m<sup>2</sup>

## Intro to High School Math

### Section 1.3: Surface Area of Objects Made from Right Rectangular Prisms



## Surface Area

### Copy Down

**Surface area** is the total area of all of the faces of the object.

**Steps needed to find Surface area are:**

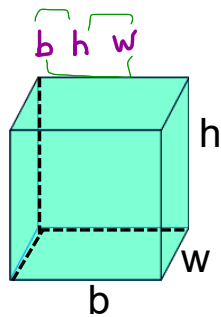
- 1. Sketch all of the faces with dimensions displayed on them.**
- 2. Find the area of each face.**
- 3. Then add up the areas of all of the faces.**

### Surface Area

What do I mean when I say surface?

ans: Surface is the face of an object

How many surfaces does each shape have?

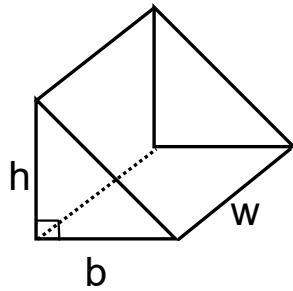


6 faces

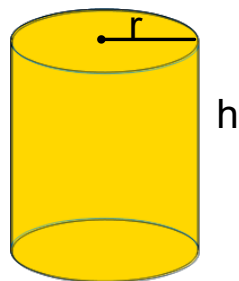
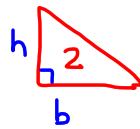
F/Back

L/R

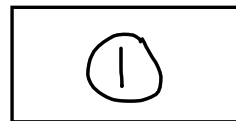
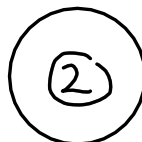
T/Bot



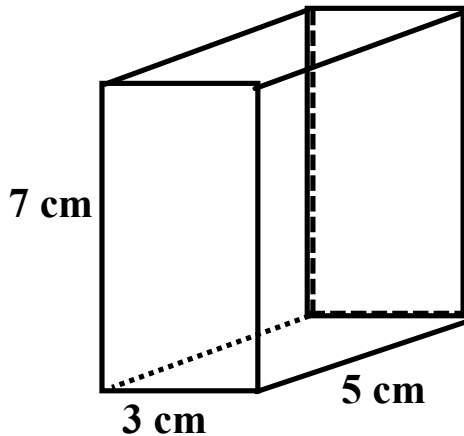
5 faces



3 faces



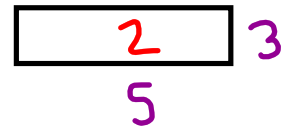
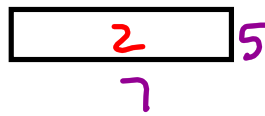
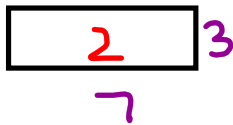
Determine the surface area of each shape?



6 faces

7, 3, 5

1. Draw all of the faces with dimensions displayed on them.



2. Find the area of each face.

$$A = b \times h$$

$$A = 7 \times 3$$

$$A = 21$$

$$2A = 42$$

$$A = b \times h$$

$$A = 7 \times 5$$

$$A = 35$$

$$2A = 70$$

$$A = b \times h$$

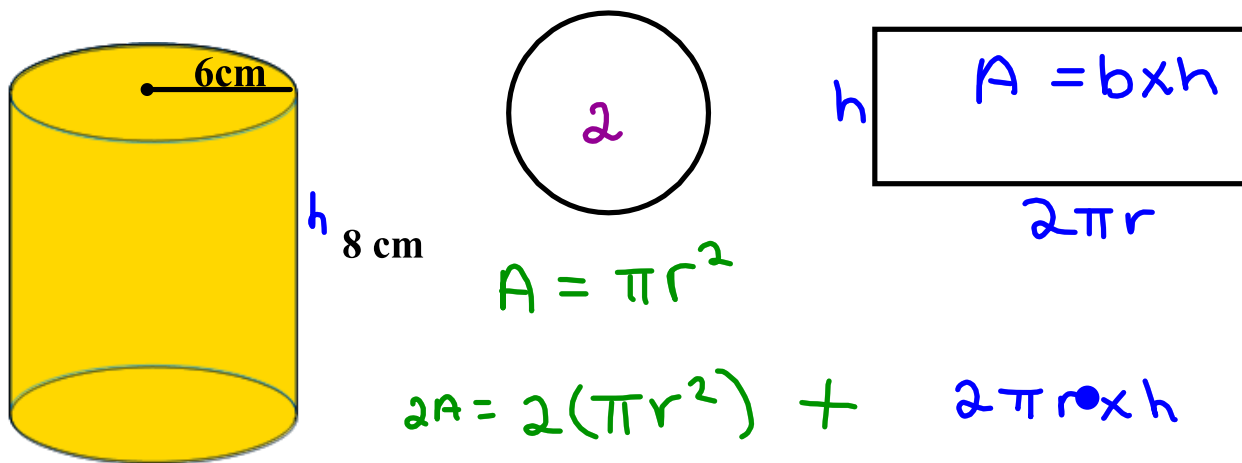
$$A = 5 \times 3$$

$$A = 15$$

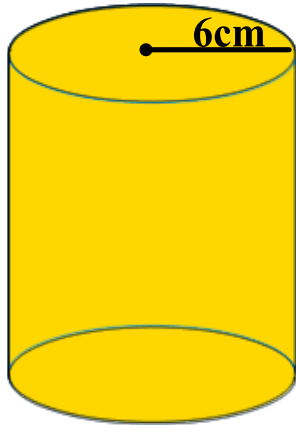
$$2A = 30$$

3. Then add up the areas of all of the faces.

$$\begin{aligned} T_{SA} &= 42 + 70 + 30 \\ &= 142 \text{ cm} \end{aligned}$$



Determine the surface area of each shape?

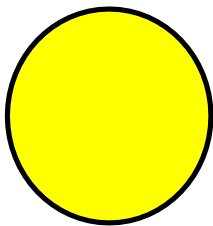


8 cm

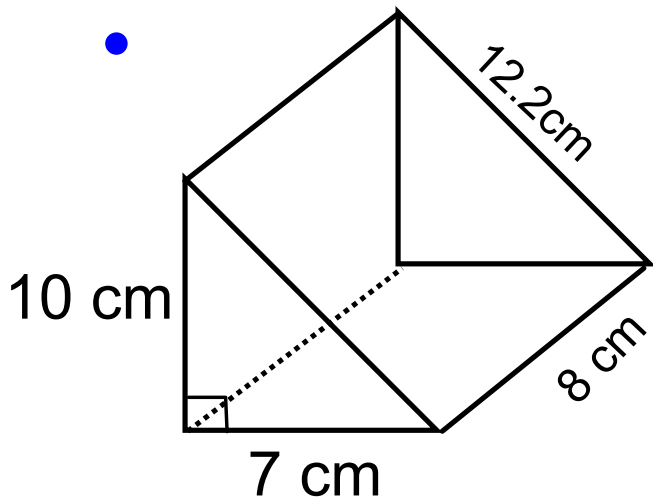
$$r = 6$$

$$h = 8$$

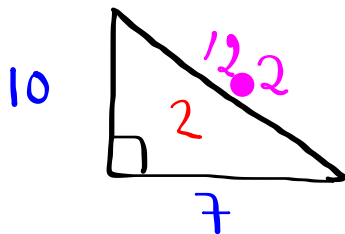
$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi rh \\
 &= 2(3.14)(6)^2 + 2(3.14)(6)(8) \\
 &= 2(3.14)(36) + 2(3.14)(6)(8)
 \end{aligned}$$







5 faces

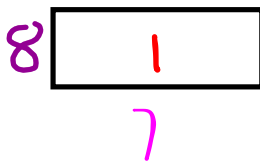


$$A = \frac{b \times h}{2}$$

$$A = \frac{7 \times 10}{2}$$

$$A = 35$$

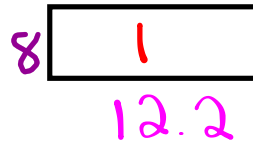
$$2A = 70$$



$$A = b \times h$$

$$A = 8 \times 7$$

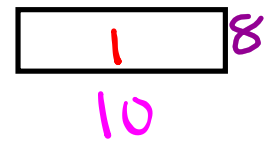
$$A = 56$$



$$A = b \times h$$

$$A = 8 \times 12.2$$

$$A = 97.6$$



$$A = b \times h$$

$$A = 8 \times 10$$

$$A = 80$$

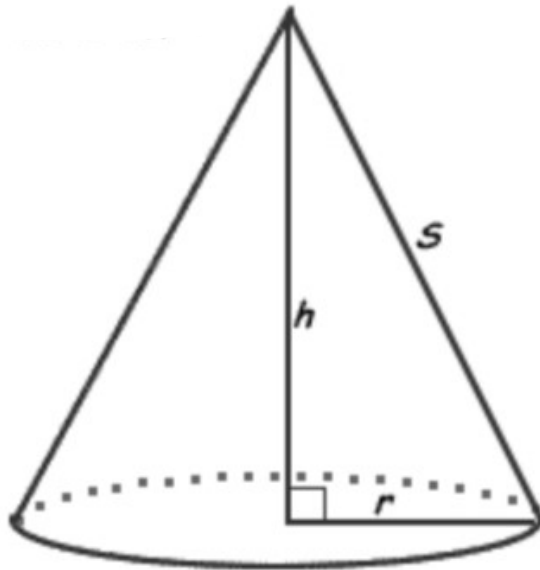
$$TSA = 70 + 56 + 80 + 97.6$$

$$= 303.6 \text{ cm}^2$$

# Cone: Surface Area Formula

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

$r$     $s$



## Sphere : Surface Area Formula

$$A = 4\pi r^2$$

