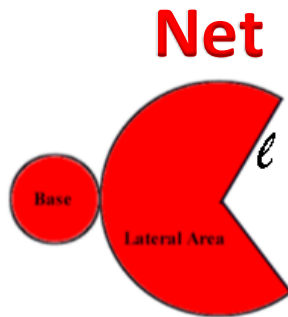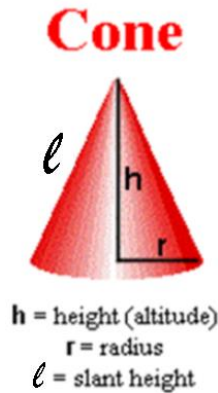## Lesson 2-3: Surface Area of Cones Practice

Learning Goals: #7: How do I find the surface area of Cones? **#8**: How do I find the lateral surface area of cones?

Surface Area of a Cone

Careful!
Sometimes we are asked to *only find the lateral area* instead of the *total area!*

What area formula(s) do you think we will need to find the __surface area__ of a cone?

Cone

ℓ

h

r

Net

ℓ

Base

Lateral Area

h = height (altitude)
r = radius
ℓ = slant height

Total Surface Area of a Cone

Total SA = A(Circle) + A(curved/lateral)

Total SA = $\pi r^2 + \pi r l$

Lateral (Curved) SA = $\pi r l$

Let's Look at a Different type of Question!

The surface area of the cone is 100π square meters. What is the slant height *l* of the cone?
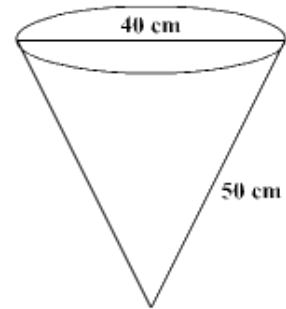
ℓ

5 m
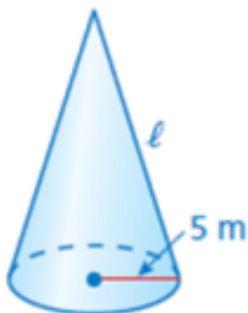
**!kroW
Get it!**

Your Turn to Practice!

1. Find the **total surface area** of the given figure. Round to the nearest square unit.

40 cm

50 cm

2. An ice cream cone has a radius of 3cm and a lateral height of 5.83cm. What is the *lateral surface area* of the cone?

3. A geometric cone has a base with a radius of 15 cm, and a slant height of 20. Find, in terms of π, the number of square centimeters in the **total surface area** of the cone.
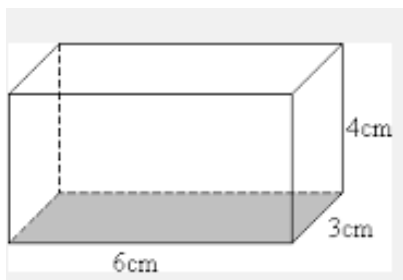
Real Life Situations!

4. You design a party hat. You attach a piece of elastic along the diameter.

a) How long must the elastic be? (*Hint: find the diameter*)

5 in.

b) How much paper do you need to make the hat, to the nearest square inch? (*Hint: fnd the lateral surface area*)

C = 22 in.

5. Calculate the surface area of the figure below.

4cm

3cm

6cm

6. A gift in the shape of a rectangular prism has the dimensions of **50 cm × 35 cm × 5 cm**. You have wrapping paper with dimensions of **75 cm × 60 cm**. Do you have enough wrapping paper to wrap the gift? **Why or why not**?

Geometry/Trig

7. A cylinder has a radius of 13cm and a height of 22cm. Find the surface area of the cylinder to the nearest square centimeter

8. A regulation NBA basketball has a surface area of 625π cm^2. What is the ***diameter*** of a regulation basketball?
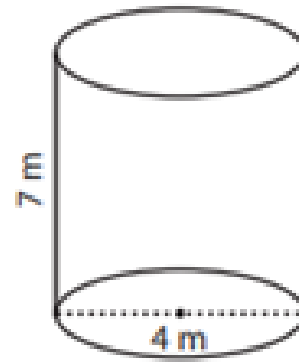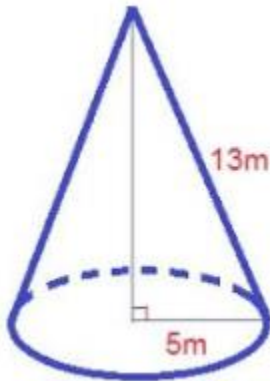
Name_____

Date _____

Lesson 2-3: Homework

Geometry/Trig

<u>Directions:</u> Please make sure to input your answers to these questions on our Google Form posted in the Classroom

1. Calculate the total surface area of the following figure to the nearest tenth.

7 m

4 m

2. Calculate the lateral surface area of the figure below. Keep your answers in terms of Pi.

13m

5m

3. Calculate the surface area of the rectangular prism below

4 ft

ft

4. **Calculate the surface area of the sphere below to the nearest square centimeter.**

4cm