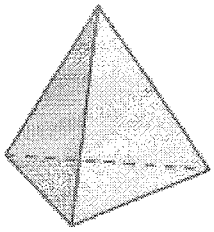
NAME: _____ DATE: _____

SURFACE AREA & VOLUME PERIOD: _____

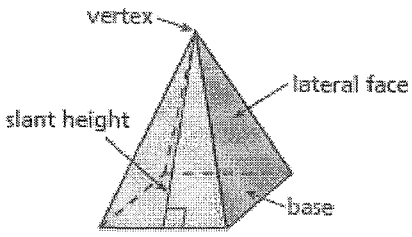
How Do You Find Surface Area of Pyramids?

(Topic #2)

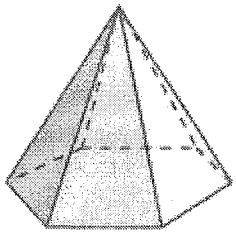
Even though many well-known pyramids have square bases, the base of a pyramid can be any polygon.



Triangular Base



Square Base

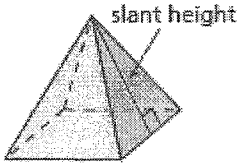


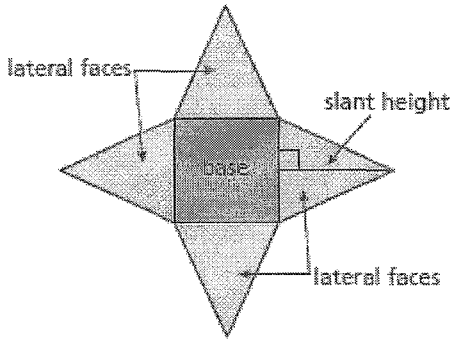
Hexagonal Base

A **regular pyramid** is a pyramid whose base is a regular polygon. The lateral faces are triangles. The height of each triangle is the **slant height** of the pyramid.

Surface Area of a Pyramid

The surface area of s pyramid is the sum of the areas of the base and the lateral faces.

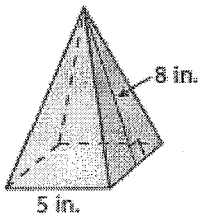


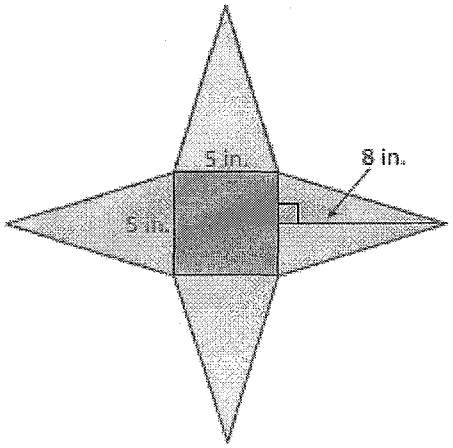


S = area of base + areas of lateral faces

EXAMPLE 1: Finding the Surface Area of a Square Pyramid

Find the surface area of the regular pyramid.





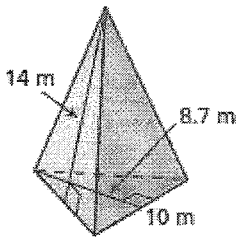
PRACTICE:

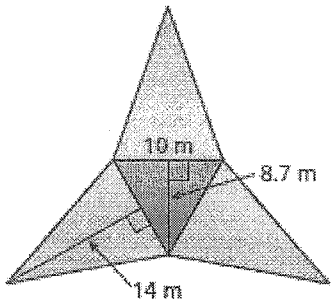
1. What is the surface area of a square pyramid with a base side length of 9 centimeters and a slant height of 7 centimeters?

   Show work below.

EXAMPLE 2: Finding the Surface Area of a Triangular Pyramid

Find the surface area of the regular pyramid .





NAME: _____ DATE: _____

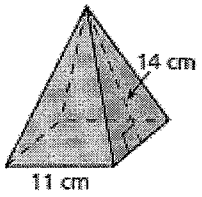
SURFACE AREA & VOLUME PERIOD: _____

HOMEWORK – (Topic #2)

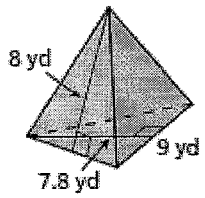
Finding Surface Area of a Pyramid

Find the surface area of the regular pyramid.

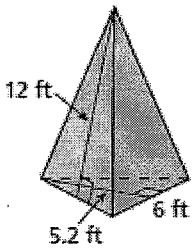
1.



2.



3.



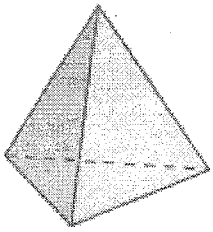
NAME: KEY DATE: _____

SURFACE AREA & VOLUME PERIOD: _____

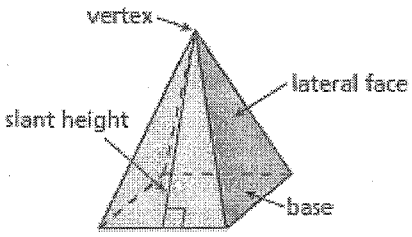
How Do You Find Surface Area of Pyramids?

(Topic #2)

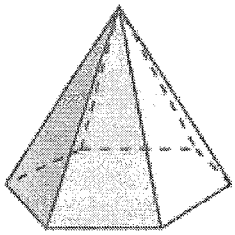
Even though many well-known pyramids have square bases, the base of a pyramid can be any polygon.



Triangular Base



Square Base

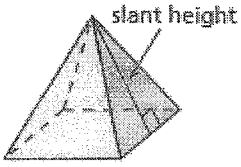


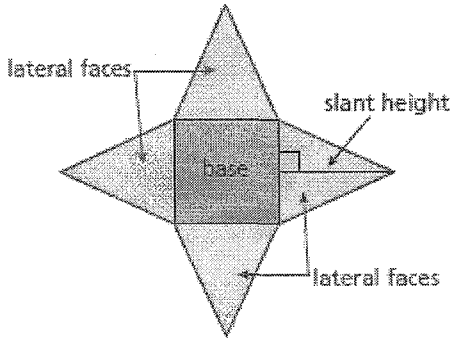
Hexagonal Base

A **regular pyramid** is a pyramid whose base is a regular polygon. The lateral faces are triangles. The height of each triangle is the **slant height** of the pyramid.

Surface Area of a Pyramid

The surface area of s pyramid is the sum of the areas of the base and the lateral faces.

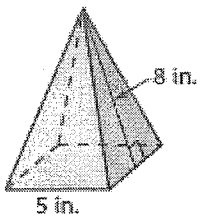




S = area of base + areas of lateral faces

EXAMPLE 1: Finding the Surface Area of a Square Pyramid

Find the surface area of the regular pyramid.



Base

$A = s^2$

$= 5^2$

$= 25$

Face

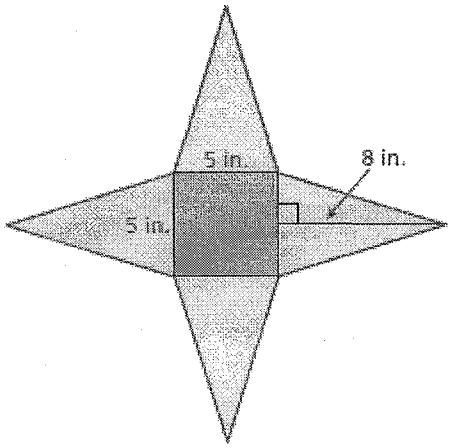
$A = \frac{1}{2}bh(4)$

$= \frac{1}{2}(5)(8)(4)$

$= 80$

$SA = 25 + 80$

$= 105 \text{ in}^2$



PRACTICE:

1. What is the surface area of a square pyramid with a base side length of 9 centimeters and a slant height of 7 centimeters?

Show work below.

Base

$A = s^2$

$= 9^2$

$= 81$

Face

$A = \frac{1}{2}bh$

$= \frac{1}{2}(9)(7)$

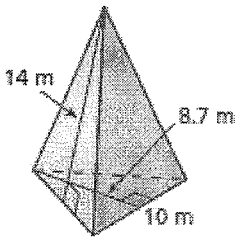
$= 31.5$

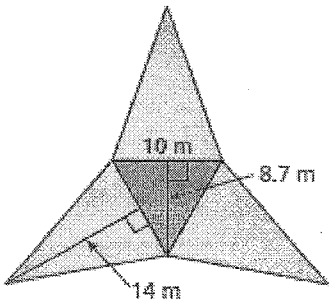
$SA = 81 + 31.5 + 31.5 + 31.5 + 31.5$

$= 207\ cm^2$

EXAMPLE 2: Finding the Surface Area of a Triangular Pyramid

Find the surface area of the regular pyramid .





Base

$A = \frac{1}{2}bh$

$= \frac{1}{2}(10)(8.7)$

$= 43.5$

Face

$A = \frac{1}{2}bh$

$= \frac{1}{2}(10)(14)$

$= 70$

$SA = 43.5 + 70 + 70 + 70$

$= 253.5\ m^2$

NAME: KEY DATE: _____

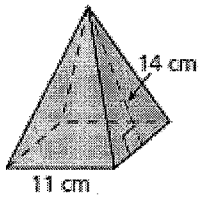
SURFACE AREA & VOLUME PERIOD: _____

HOMEWORK – (Topic #2)

Finding Surface Area of a Pyramid

Find the surface area of the regular pyramid.

1.



Base

$A = s^2$

$A = 11^2$

$A = 121$

Face

$A = \frac{1}{2}bh$

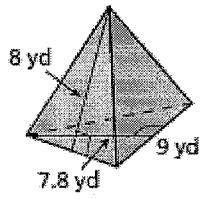
$A = \frac{1}{2}(11)(14)$

$A = 77$

$SA = 121 + 77 + 77 + 77 + 77$

$= 429\ cm^2$

2.



Base

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(9)(7.8)$

$A = 35.1$

Face

$A = \frac{1}{2}bh$

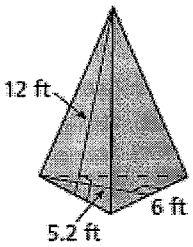
$A = \frac{1}{2}(9)(8)$

$A = 36$

$SA = 35.1 + 36 + 36 + 36$

$= 143.1\ yd^2$

3.



Base

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(6)(5.2)$

$A = 15.6$

Face

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(6)(12)$

$A = 36$

$SA = 15.6 + 36 + 36 + 36$

$= 123.6\ ft^2$