Lesson 12-4 (pgs. 649-653)
Surface Area of Rectangular Prisms

Surface Area:

Formula for Surface Area of a Rectangular Prism
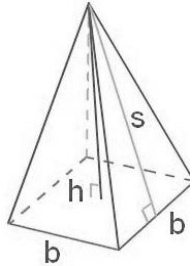
ex)

4 ft

3 ft

6 ft
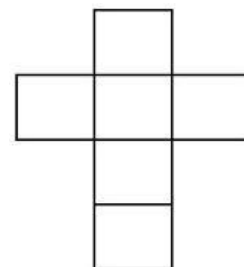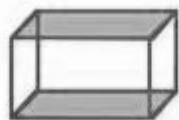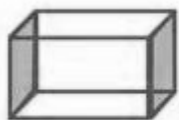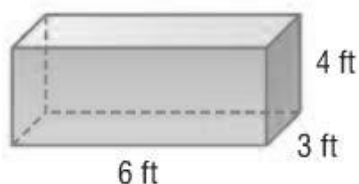
ex) Rectangular Prism:
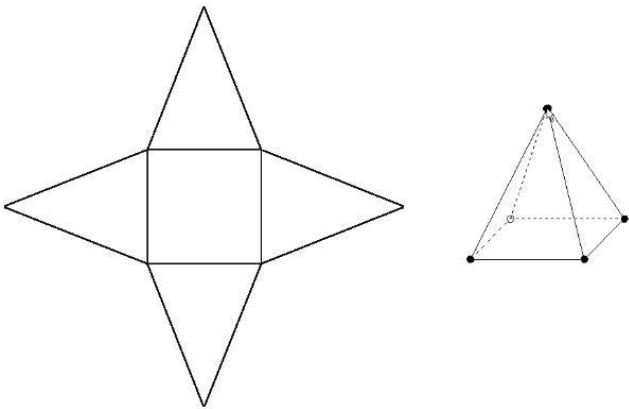
length = 10 cm, width = 8 cm, height = 24 cm

Chapter 12 Supplemental Lesson 1
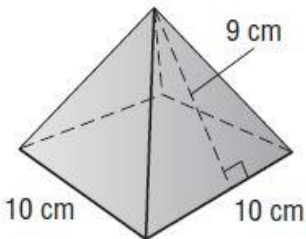## Surface Area of Rectangular Pyramids

Surface Area of a Rectangular Pyramid:

Formula for Surface Area of a Rectangular Pyramid
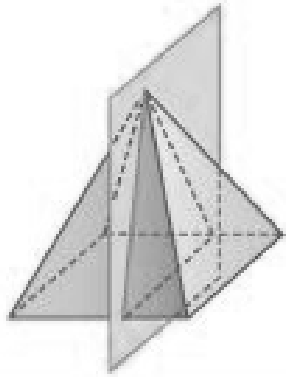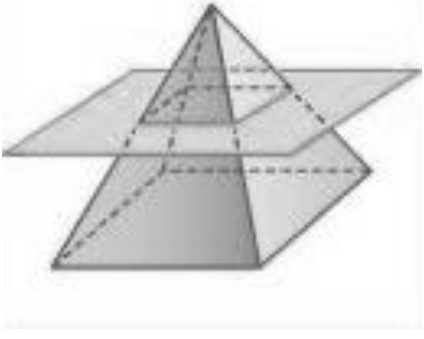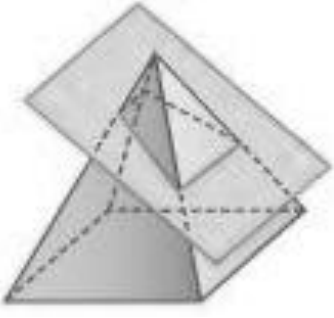
ex)

9 cm

10 cm   10 cm

ex) Rectangular Pyramid:

length = 3 in, width = 3 in, slant height = 15 in
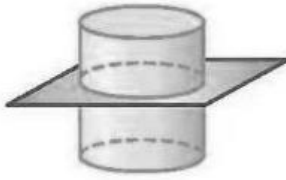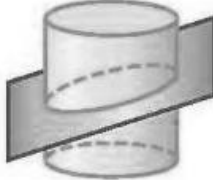
Chapter 12 Supplemental Lesson 2
Cross Sections of Figures
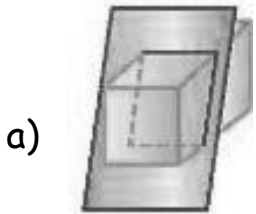
Cross Section:

Cross Section	Slice	Drawing/Description
vertical		
horizontal		
angled		

Cross Sections of Figures (continued)

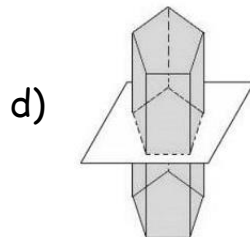| Cross Section	Slice	Drawing/Description
vertical		
horizontal		
angled		

Describe the shape resulting from each cross section.
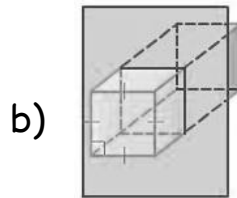
a)

shape of cross section: _____

b)

shape of cross section: _____

c)

shape of cross section: _____

d)

shape of cross section: _____

Name: **Key**   Date:_____   Period:_____

Lesson 12-4 (pgs. 649-653)
Surface Area of Rectangular Prisms

Surface Area: The sum of all of the surfaces of a 3D figure (Bases & lateral Faces)

Formula for Surface Area of a Rectangular Prism

$$S.A. = 2B + 2B + 2B \qquad B = \text{area of Base}$$

$$S.A = 2bh + 2bh + 2bh \rightarrow 2lw + 2wh + 2lh$$
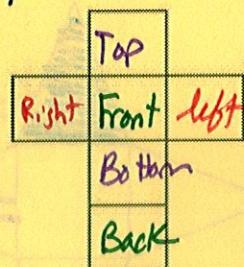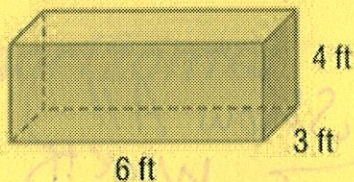
Right & left   Top & Bottom   Front & Back

label: in^2, yd^2, ft^2

Top	
Right	Front	left
	Bottom	
	Back	

ex)

4 ft, 3 ft, 6 ft

$$S.A. = \overset{2B}{2\cdot 6\cdot 4} + \overset{2B}{2\cdot 6\cdot 3} + \overset{2B}{2\cdot 6\cdot 4}$$

$$24 + 36 + 48$$

$$S.A. = 108 \, ft^2$$

~~x~~Use each # twice

ex) Rectangular Prism:

length = 10 cm, width = 8 cm, height = 24 cm

$$S.A. = 2B + 2B + 2B$$
$$S.A. = 2\cdot 10\cdot 24 + 2\cdot 8\cdot 10 + 2\cdot 8\cdot 24$$
$$480 + 160 + 384$$
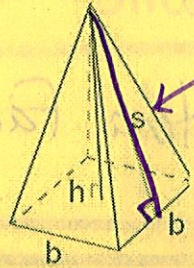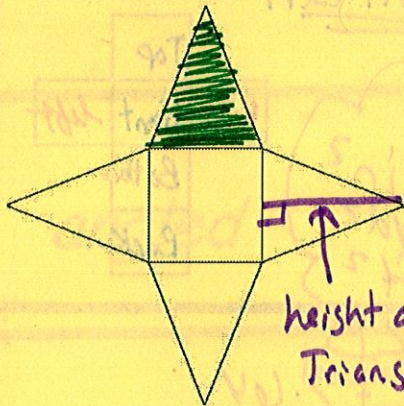$$S.A. = 1024 \, cm^2$$

Surface Area of a Rectangular Pyramid:
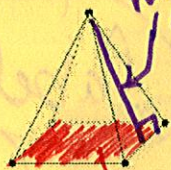
Slant height = (ℓ) height of Triangle)

4 lateral Faces (Triangles)

1 Base (Rectangle)

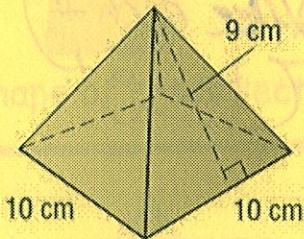# Formula for Surface Area of a Rectangular Pyramid

S.A. = 4(Triangle) + Base (Area of)

$$S.A. = 4(\tfrac{1}{2}bh) + bh$$

Triangle   Base

height of Triangle

height of Triangle
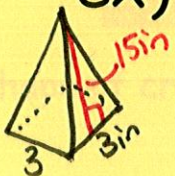
Area of the Base

ex)

9 cm, 10 cm, 10 cm

$$S.A. = 4(\tfrac{1}{2}bh) + bh$$
$$S.A. = 4(\tfrac{1}{2}(9)10) + 10*10$$
$$S.A. = 180 + 100$$
$$S.A. = 280 cm^2$$

Show All Work!!

ex) Rectangular Pyramid:

15in, 3in, 3in

length = 3 in, width = 3 in, slant height = 15 in
$$S.A. = 4(\tfrac{1}{2}bh) + bh$$
$$S.A. = 4(\tfrac{1}{2} \cdot 3 \cdot 15) + 3 \cdot 3$$
$$S.A. = 90 + 9$$
$$S.A. = 99 in^2$$
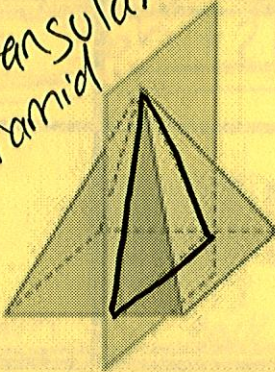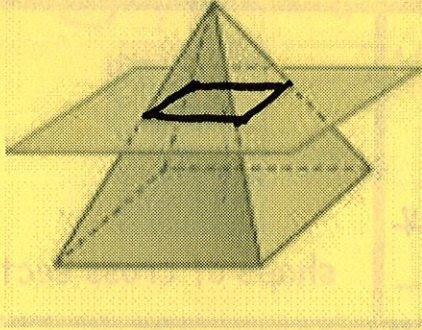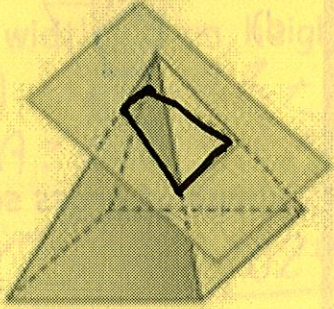
3-Triangle   6-hexagon   9-nonagon
4-Quadrilateral   7-heptagon   10-decagon
5-Pentagon   8-Octogon
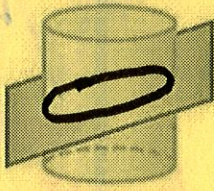
Chapter 12 Supplemental Lesson 2
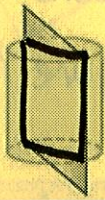
Cross Sections of Figures

Cross Section: Is the shape that occurs when a plane intersects or slices a 3D Figure
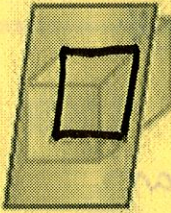
Cross Section	Slice	Drawing/Description
• vertical	Rectangular Pyramid	△ Triangle
horizontal		✳ Square✳ Rectangle parallelogram Rhombus
• angled		Trapezoid

Cross Sections of Figures (continued)
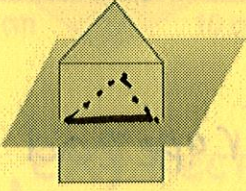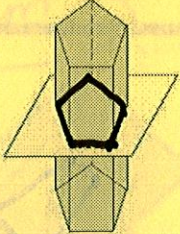
Cross Section	Slice	Drawing/Description
vertical		▢ Rectangle
horizontal		◯ Circle
angled		⬭ oval (ellipse)

Describe the shape resulting from each cross section.

a)

shape of cross section: *Rectangle* //-ogram

b)

shape of cross section: Square

c)

shape of cross section: Triangle

d)

shape of cross section: Pentagon