Lesson 12-2

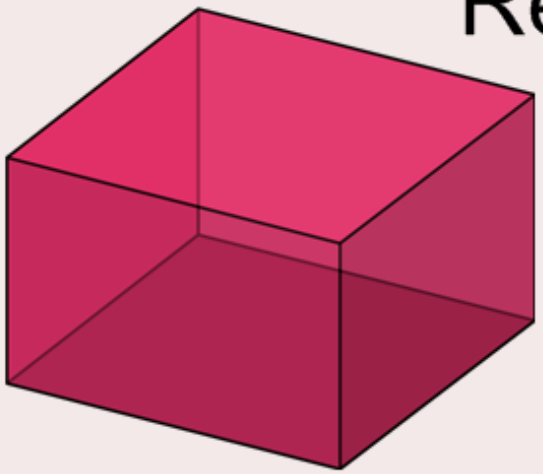
Surface Areas of Prisms and Cylinders

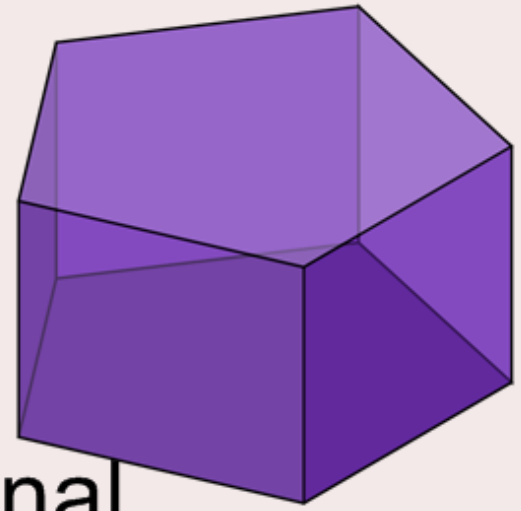
You will identify and name three dimensional figures

You will find the lateral areas and surface areas of prisms and cylinders

Prisms

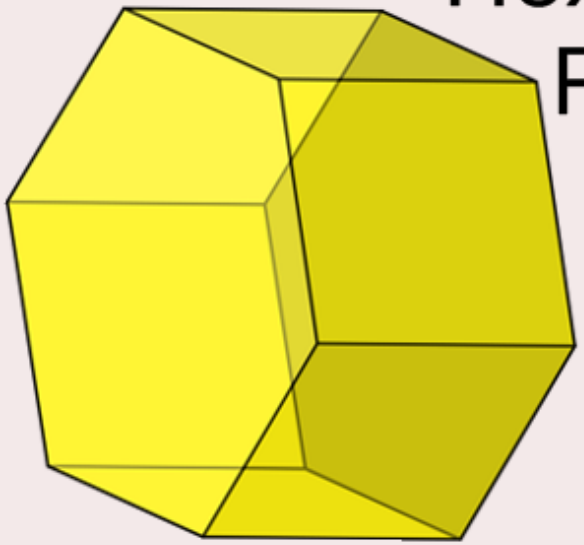
Rectangular Prism



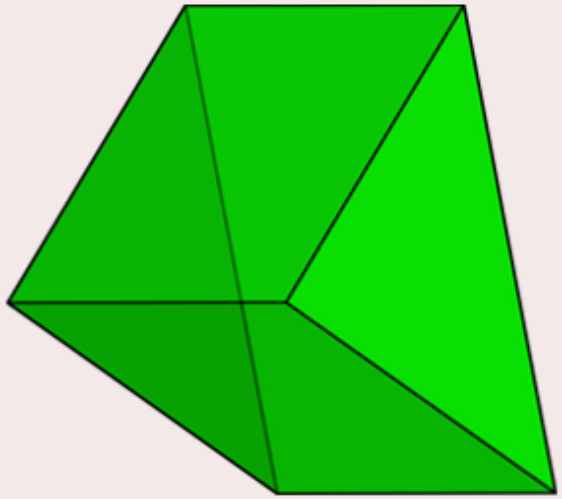


Pentagonal Prism

Hexagonal Prism

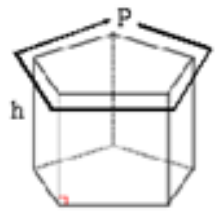


Triangular Prism



Name _____

Surface Area and Volume Formula Sheet

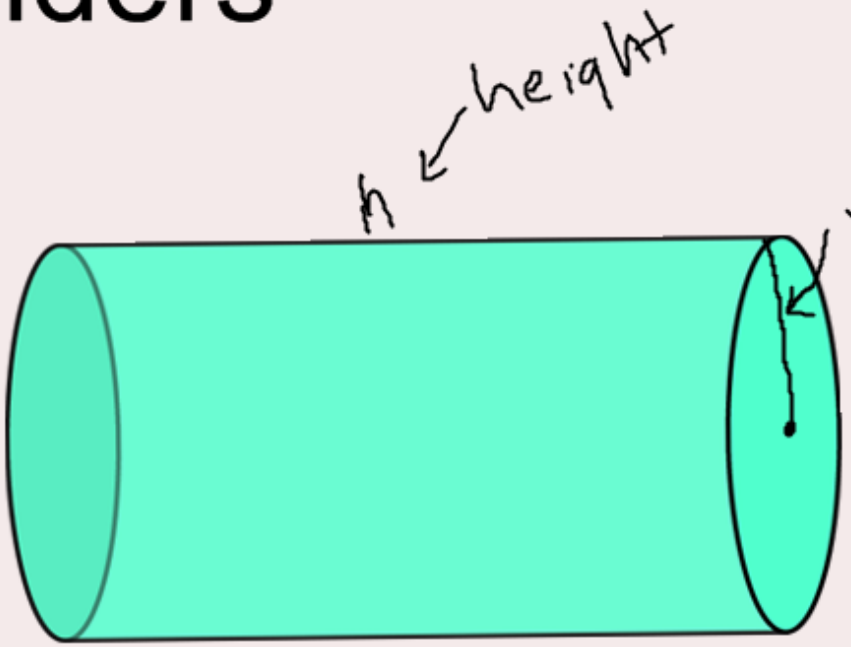
Solid	Area	Volume
Prism 	$L = Ph$ → height of prism (distance btwn the bases) (of base) $T = L + 2B$ ↓ area of base	
Pyramid 		

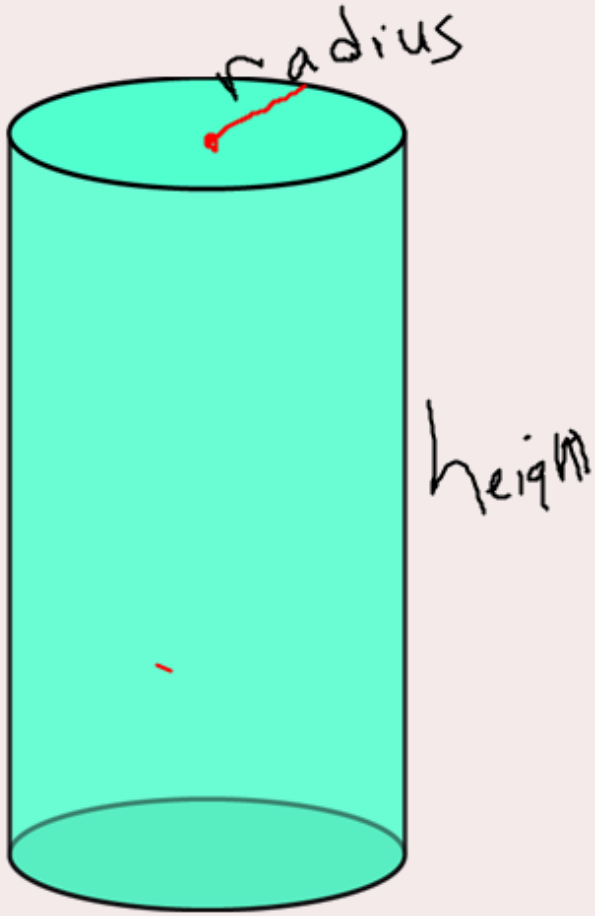
KEY

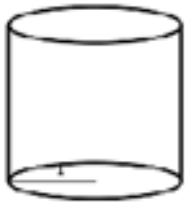
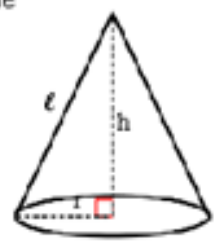
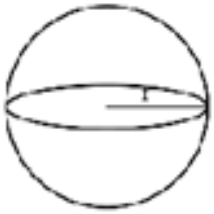
S or T - total surface area (sides and bases) P - perimeter of base V - Volume ℓ - slant height

L - lateral area (sides only) B - area of base h - height r - radius

Cylinders





Solid	Area	Volume
Cylinder 	$L = 2\pi r h$ $T = L + 2B$ $T = L + 2\pi r^2$	
Cone 		
Sphere 		

KEY

T- Total surface area P- perimeter of Base V- Volume ℓ- slant height

L- lateral area B- area of base h- height r- radius

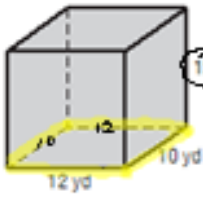
NAME _____ DATE _____ PERIOD _____

12-2 Skills Practice

Surface Areas of Prisms and Cylinders

Find the lateral area and surface area of each prism. Round to the nearest tenth if necessary.

1.



$L = Ph$

$P = 12+10+12+10 = 44$

$h = 12$

$L = 44(12) = 528\ yd^2$

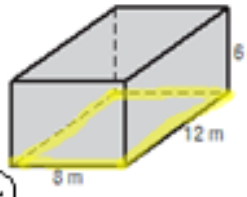
$T = L + 2B \rightarrow$ Rect.

$T = 528 + 2(12)(10)$

$T = 528 + 240$

$T = 768\ yd^2$

2.



$L = Ph$

$P = 8+8+12+12 = 40$

$h = 6$

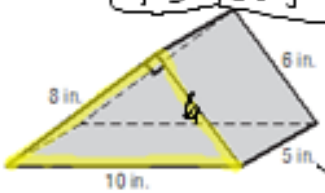
$L = 40(6) = 240\ m^2$

$T = L + 2B \rightarrow (bh)$

$T = 240 + 2(8)(12)$

$T = 240 + 192 = 432\ m^2$

3.



$L = Ph$

$P = 8+10+6 = 24$

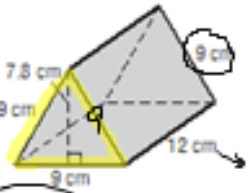
$h = 5$

$L = 24(5) = 120\ in^2$

$T = L + 2B \rightarrow \frac{1}{2}bh$

$T = 120 + 2 \cdot \frac{1}{2}(8)(6) \rightarrow T = 120 + 48 = 168\ in^2$

4.



$L = Ph$

$P = 9+9+9 = 27$

$h = 12$

$L = 27(12) = 324\ cm^2$

$T = L + 2B \rightarrow \frac{1}{2}bh$

$T = 324 + 2 \cdot \frac{1}{2}(9)(7.8) \rightarrow 324 + 70.2 = 394.2$

Find the lateral area and surface area of each cylinder. Round to the nearest tenth.

5.

$L = 2\pi rh$

$L = 2\pi(6)10$

$L = 377.0$

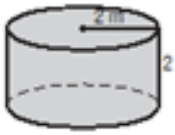
$T = L + 2B \rightarrow \pi r^2$

$T = 377 + 2\pi 6^2$

226.2

$= 603.2\ in^2$

6.



$L = 2\pi rh$

$L = 2(\pi)(2)(2)$

$L = 25.1\ m^2$

$T = L + 2B \rightarrow \pi r^2$

$T = 18.8 + 2\pi(2)^2$

$25.1 + 25.1 = 439\ m^2$

7.

$L = 2\pi rh$

$L = 2\pi(3)(2)$

$L = 37.7$

$T = L + 2B$

$T = 37.7 + 2\pi(3)^2$

$T = 94.2$

8.

$L = 2\pi rh$

$L = 2\pi(8)(12)$

$L = 603.2\ in^2$

$T = L + 2B$

$T = 603.2 + 2\pi(8)^2$

$T = 603.2 + 402.1$

1005.3