Warmup 3/(# of edges on a cube + # of vertices on a cube – # of faces on a cube + # of rectangles on a triangular prism + # of pentagons on a pentagonal prism + 1)

(This is Week 1!)

*****TURN IN YOUR UNUSED RESTROOM PASSES!!!*****

1) **Get your 3rd 9 weeks goal down from the #goals cabinet. (Also, get a calculator while you're up there.) Then write about how successful you were with that goal, and why.**
2) **Draw a cube, triangular prism, and pentagonal prism. Use these pictures to verify that the problem in the date is correct. (Today is the 20th.)**

DAVE & BUSTERS PERMISSION SLIPS DUE TOMORROW @ 3:30!!!

- No permission slip = no go
- Turn in to Mrs. England

Perfect Effort Grades – 3rd 9 weeks

2nd	4th	5th	6th
Saniya A	Olivia L	Matthew C	Khristian A
Yael F		Lily C	
Lucia H		Julie M	
Alex X			

Saniya, Yael	396
Luke, Quentin	
Ameron, Ishmael	598
Laikyn, Alex	546
Alyssa, Ayoob	1100
Sean, Lazarius	208
Kimberly, Stella	1034
Jataela, Emma, Kousei	317
Anderson, Emmanuel	861

LaKira & Michael	615
Eleanor & Olivia L	798
Cydney & Shadaya	940
Sanaa & Ryne	860
Luke, Jonas, Katie	820
Xander & Ben	1012
Olivia T & Jack	774
Braden & Jackson	690
Olivia W & Jesse	860

Olivia & Evan	630
Chesney & Natalie	640
Parker & Lily	9030
Maggie & Brown	546
Greta & Wyatt	1050
Dylan & Jaylyn	585
Brooks & Cole	184
Loren & Annie	
Sebastian & Claire	2520
Caleb	
Jamie & Julie	
Matthew & Sophia	

Jesse & Kailey	321
BJ & Kyndal	630
Cincere & Adam C	602
Dion & Emma	902
Briana & Jack	1408
Dylan & Maisy	660
Donovan, Kiara, Khristian	424
Will & Quinn	457
Loki & Jeremiah	784

AND THE ANSWER IS…

1089

kernels

Closet Estimates…

- Ayoob & Alyssa – 1100
- Greta & Wyatt – 1050
- Stella & Kimberly – 1034
- Cydney & Shadaya – 940
- Dion & Emma – 902

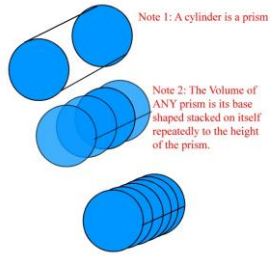
Strategies we used???

- **The strategy I was hoping you would use:**
- Figure out how many kernels are in 1 "layer"
- Think of the cylinder as layers of these circles stacked on top of each other
- Multiply the # of kernels in 1 layer by how many "layers" there would be

- **WHY WERE OUR ESTIMATES TOO LOW???**
- There are gaps in between the popcorn kernels, which causes the kernels to "settle" more. Most people don't think to account for this.

Table of Contents (2nd Semester)

A cylinder is a prism…

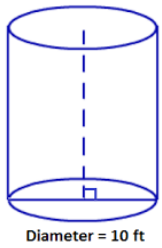


Volume of a Cylinder

$V = \pi r^2 \cdot h$

- r = radius of the base
- h = height of cylinder

- Find the volume. Round to the nearest tenth.



$V = \pi r^2 \cdot h$

$V = \pi \cdot 5^2 \cdot 21$

$V \approx 1649.3\ ft^3$

Popcorn Challenge: Part 2

- Goal: Figure out how many kernels of popcorn would fit in the cone.
- The cone and cylinder have the same height and the same radius. I will pass around the cylinder and the cone – you may look at it for a few seconds.
- You and your group need to **discuss** and come up with how many kernels of popcorn you think fit in the

How many of the "cones" fill up the cylinder?

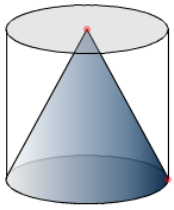
- Demonstration (need a volunteer)

AND THE ANSWER IS…

356

kernels

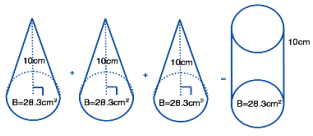
Table of Contents (2nd Semester)



Volume of a Cone

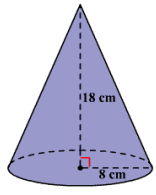
$V = \frac{1}{3}\pi r^2 \cdot h$ OR: $V = \frac{\pi r^2 \cdot h}{3}$

- Basically, 3 cones = 1 cylinder (if the radius & height is the same)



Example: Cone

- Find the volume of the cone:

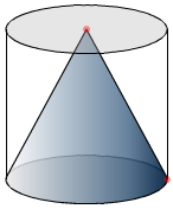


$V = \frac{1}{3}\pi r^2 \cdot h$

$V = \frac{1}{3}\pi \cdot 8^2 \cdot 18$

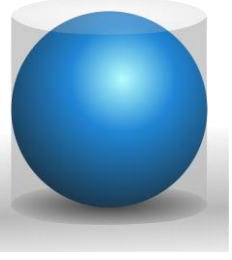
$V \approx 1206.4\ cm^3$

We just learned….



- The volume of a cone is 1/3 of the volume of the cylinder with the same base (radius) and height.

What about a sphere???



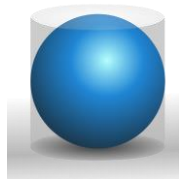
- The volume of a sphere is _____ of the volume of the cylinder with the same radius and height.

The answer…

- **The volume of a sphere is TWO-THIRDS of the volume of the cylinder with the same radius and height.**

Volume of a sphere

- $V(sphere) = \frac{2}{3}(\pi r^2 \cdot h)$
- But…
- In a sphere, what is another way of saying the "height"?

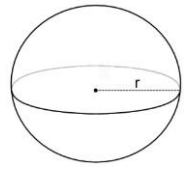


Volume of a sphere

- "Height" of a sphere = diameter = 2•radius
- $V(sphere) = \frac{2}{3}(\pi r^2 \cdot h)$
- $V(sphere) = \frac{2}{3}(\pi r^2 \cdot 2r)$
- $V(sphere) = \frac{2}{3} \cdot 2 \cdot \pi r^2 \cdot r$
- $V(sphere) = \frac{4}{3}\pi r^3$

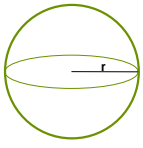
Volume of a sphere

- **Volume of a Sphere:**
  - $V = \frac{4}{3}\pi r^3$



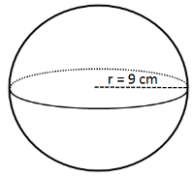
Drawing a sphere

- It's hard to draw a sphere, because when you do, it just looks like a circle.
- One way around this is to draw in the circle around the middle (like the "Equator")



Find the volume:

- Round to the nearest tenth.



$V = \frac{4}{3}\pi r^3$

$V = \frac{4}{3}\pi(9)^3$

$V = 972\pi\ cm^3$

$V \approx 3053.6\ cm^3$

Question…

- What is a half of a sphere called???
- **A hemisphere**

Homework

- p. 593 (1 – 4)
- p. 601 (5 – 8)
- p.609 (2, 7, 8)