Updated 1/10/2022

Daily Class Slides

Geometry Spring 2022
Chandru Narayan

Introductions!

Chandru Narayan

Role at Bush: CS and Math teacher

What you were like in High School: Outgoing

Your first day of school tradition/superstition: Bowtie!

Who inspires you: Friendly People

Your interests outside of Bush: Bicycling, Astronomy

Something you are doing: Bicyling 110 miles to raise money for the Child Abuse Prevention dept at Mary Bridge Children's Hospital - My 15th year

A song you know all the words to: Katrinile Varum Geetham - A Tamil song about music in a light breeze

A talent I cherish: South Indian Cooking

Thursday, Jan 6th

What's happening today?

Check-in
- Welcome new Students!
- Reflections upon Fall Term
- Class Logistics
  - Ready to have fun! Be courteous, Participate, do lots of problems in class!
  - All Assignments in Portal and linked to Google Classroom. Do not be late in submitting them!
  - Bring fully charged laptop, geo instruments, notebook, toolbox & calculator
  - Dress Warmly Windows to be Open , Masks ON, No eating or drinks inside
  - Can you Access the textbook online?

Today
- Review Perimeter
- Introduce Area & Volume - New Chapter 8 (Page 422 in book)!
- 5-minute Break
- Area & Volume Investigation - Area of Rect, Parallelogram and any Triangle

Reminder
- Complete Investigation - Due today
- Complete Homework - Due Jan 10th

Introduce new Students!

Welcome Luc, Charlotte, Cophine!

State you name clearly pronouncing first and last names

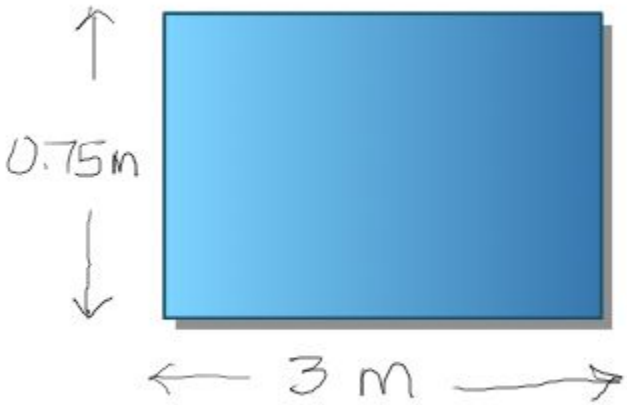
How would you like to be addressed?

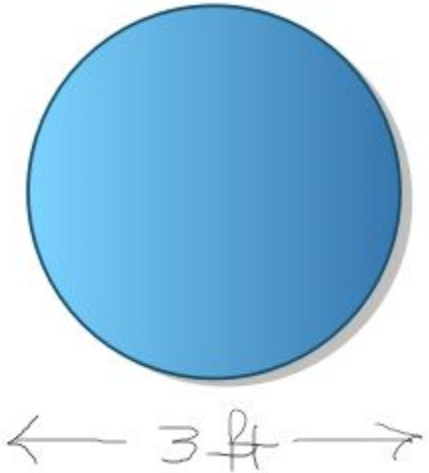
Your personal pronouns

Something interesting or special/peculiar about you?

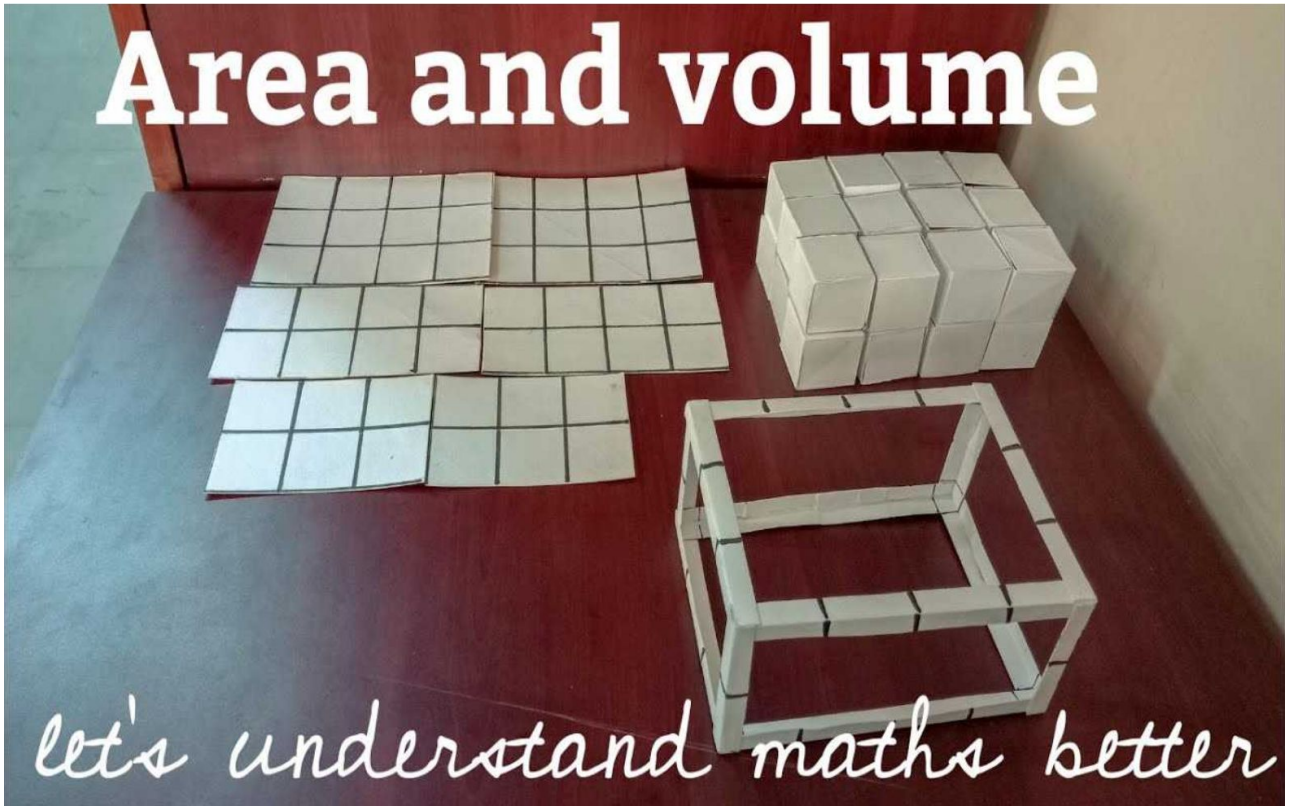
What are your expectations from this class?

What is the Perimeter of these Shapes ? Units ?





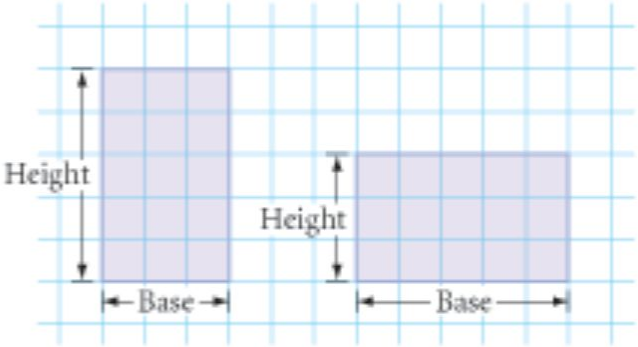
Area & Volume - What are these? Units?



How many tiles Investigation

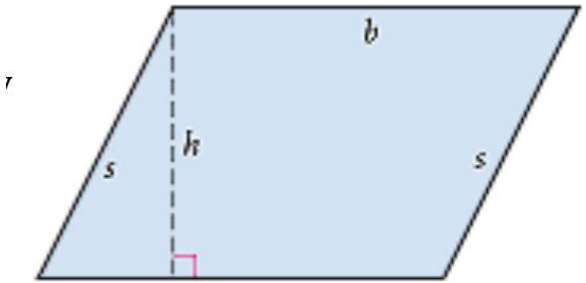
- Get handout from Chandru or print from GC
- Hint for #5:
  - poster: 2x3ft, postcard: 4x6”, queen bedsheet: 60x80”, stamp: 1x1.5”
- Hint for #8:
  - Think of cutting out 1 triangle from one side of parallelogram and rearranging

Area of Rectangle & Parallelogram Conjectures



Rectangle Area Conjecture C-74

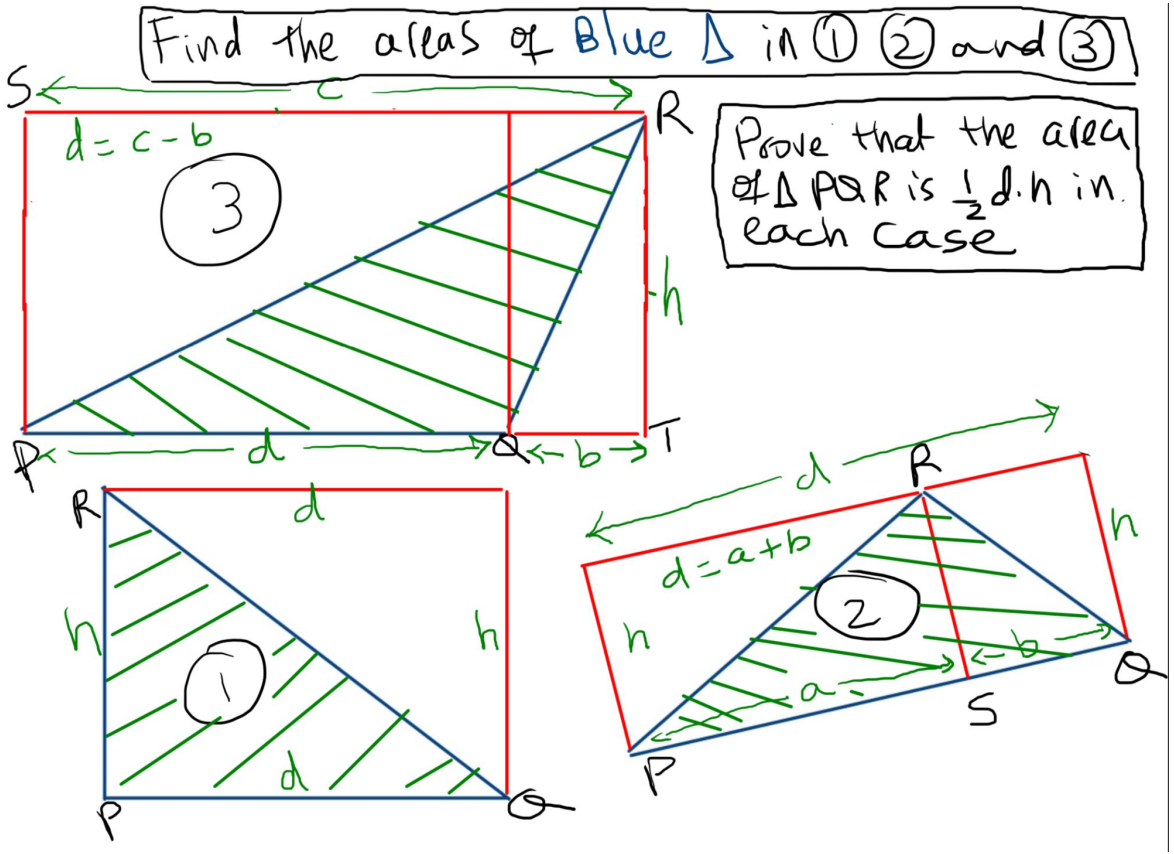
The area of a rectangle is given by the formula ?, where A is the area, b is the length of the base, and h is the height of the rectangle.



Parallelogram Area Conjecture C-75

The area of a parallelogram is given by the formula ?, where A is the area, b is the length of the base, and h is the height of the parallelogram.

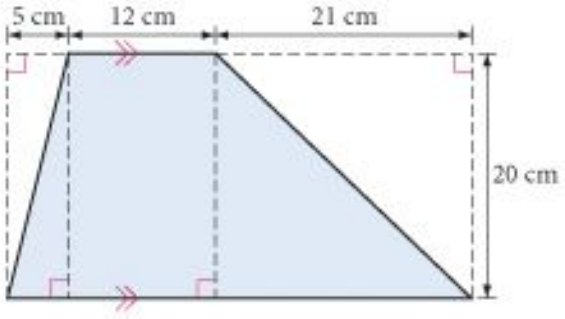
Derive Area of any Triangle based on Rect area Conjectures



Let’s do a few problems

5. $P = 40$ ft
$A = \underline{?}$

23. Find the area of the trapezoid at right.



Reminders!

Reminders

- Complete How many Tiles Investigation - Due today
- Complete Rect & Parallelogram Areas Homework - Due Jan 10th

Monday, Jan 10th

What's happening today?

Check-in

- How was your 1st week?
- Did you complete the Fall Course Review. Please click here to complete
- Form Random Teams!
- Review Syllabus

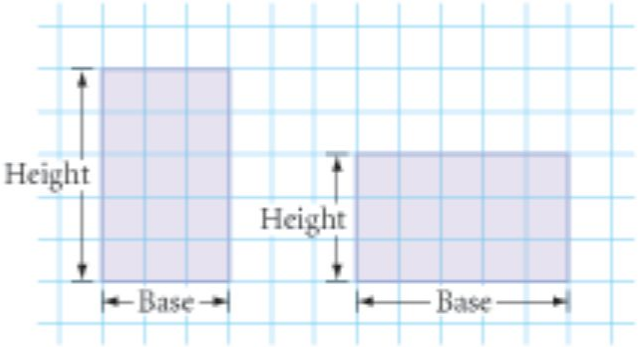
Today

- Review Rectangle & Parallelogram Area Conjectures
- Review formula for Area of any Triangle
- Review some Rect, Parallelogram Area Problems
- A Plethora of Area Formulas to be Discovered!

Reminder

- Investigation & 8.1 Homework Due today

Area of Rectangle & Parallelogram Conjectures



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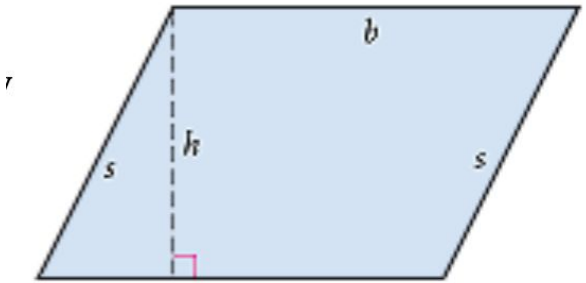

Parallelogram Area Conjecture C-75

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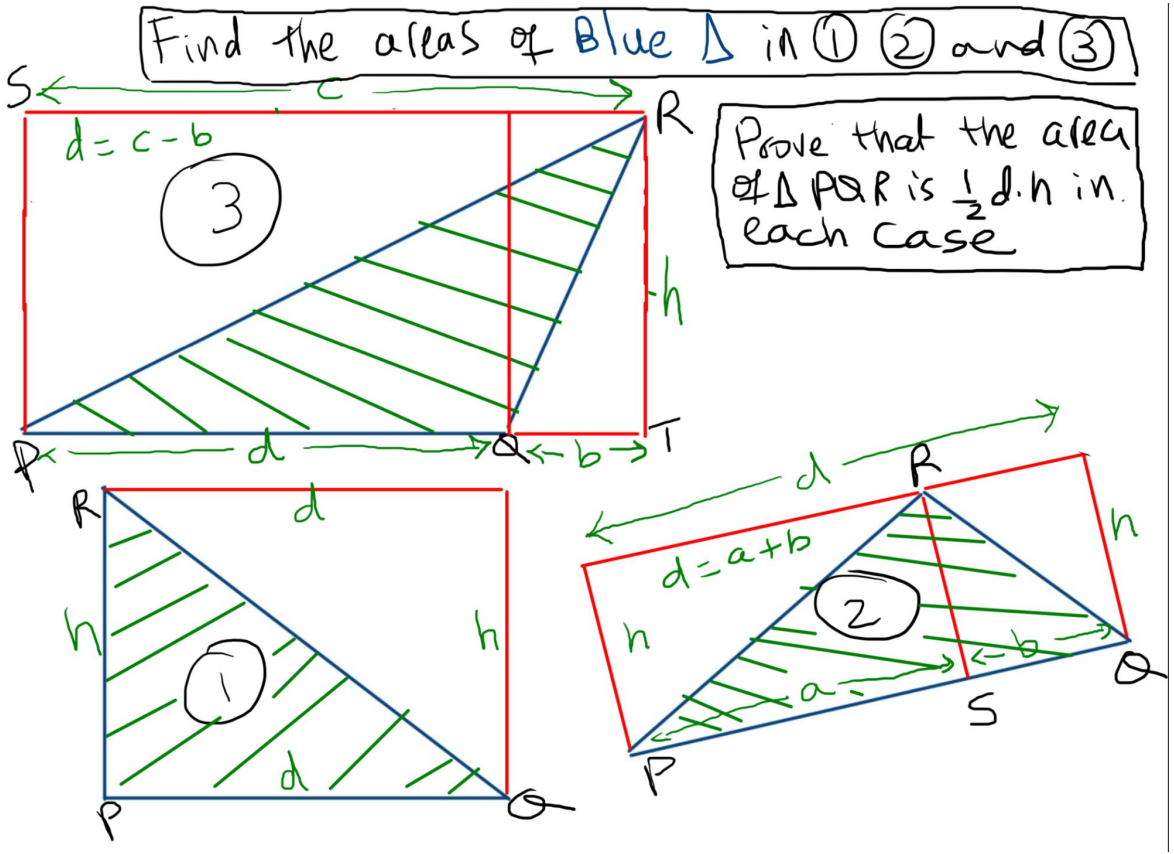
Derive Area of any Triangle based on Rect area Conjectures

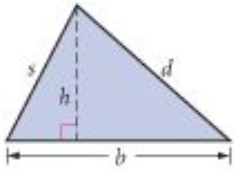


Area of Triangles Conjecture

Investigation 1
Area Formula for Triangles

You will need

- heavy paper or cardboard



Step 1 Cut out a triangle and label its parts as shown. Make and label a copy.

Step 2 Arrange the triangles to form a figure for which you already have an area formula. Calculate the area of the figure.

Step 3 What is the area of one of the triangles? Make a conjecture. Write a brief description in your notebook of how you arrived at the formula. Include an illustration.

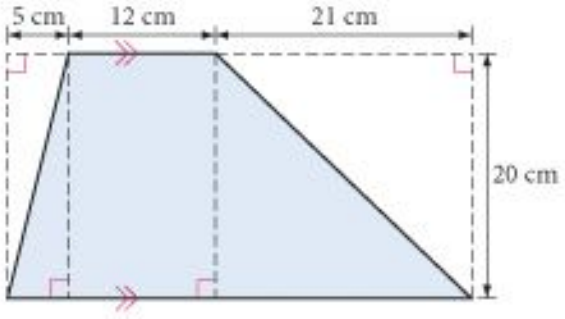
Triangle Area Conjecture C-76

The area of a triangle is given by the formula $\frac{?}{}$, where A is the area, b is the length of the base, and h is the height of the triangle.

Review Problems problems

5. $P = 40$ ft
$A = \underline{?}$

23. Find the area of the trapezoid at right.



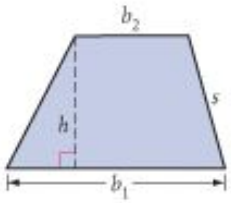
Let's derive the Area Formula for a Trapezoid

Area of Trapezoids Conjecture

Investigation 2
Area Formula for Trapezoids

You will need

- heavy paper or cardboard



Step 1 Construct any trapez… …ndicular to its bases. Label the trapezoid as sh…

Step 2 Cut out … a label a copy.

Step 3 Arrang… …s to form a figure for which you already have an area formula. …of polygon is this? What is its area? What is the area of one trapezoid? …e a conjecture.

Instead of following these steps, we are going to do these pure algebraic fashion!

Trapezoid Area Conjecture C-77

The area of a trapezoid is given by the formula $\frac{?}{}$, where A is the area, b_1 and b_2 are the lengths of the two bases, and h is the height of the trapezoid.

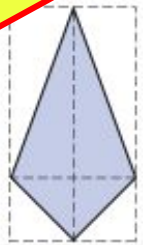
Area of Kites Conjecture

Investigation 3

Area Formula for Kites

Can you rearrange a kite into sha
already have the area formu
properties of a kite?

Create and carry out
formula for the area o
your group. State a conj



Instead of following these steps, we are going to do these pure algebraic fashion!

Kite Area Conjecture C-78

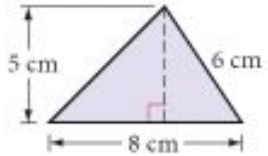
The area of a kite is given by the formula ?.

Area Problems!

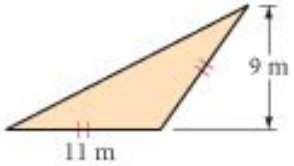
EXERCISES

In Exercises 1–12, use your new area conjectures to solve for the unknown measures.

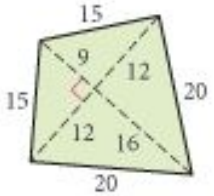
1. $A = \underline{?}$



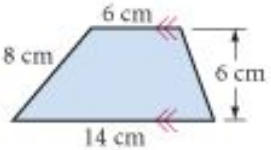
2. $A = \underline{?}$



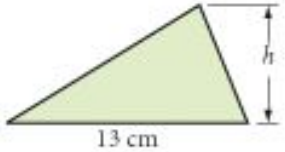
3. $A = \underline{?}$



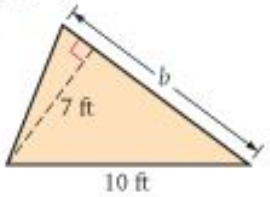
4. $A = \underline{?}$



5. $A = 39\ \text{cm}^2$
$h = \underline{?}$



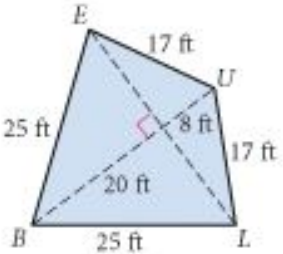
6. $A = 31.5\ \text{ft}^2$
$b = \underline{?}$



s’more Area Problems!

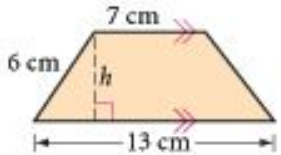
7. $A = 420\ \text{ft}^2$

$LE = \underline{?}$



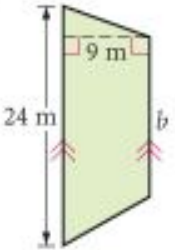
8. $A = 50\ \text{cm}^2$ (h)

$h = \underline{?}$



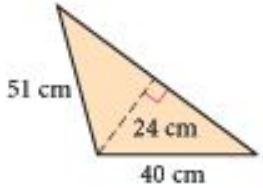
9. $A = 180\ \text{m}^2$

$b = \underline{?}$



10. $A = 924\ \text{cm}^2$

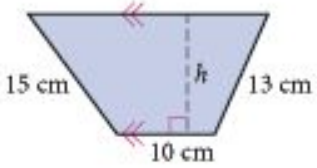
$P = \underline{?}$



11. $A = 204\ \text{cm}^2$

$P = 62\ \text{cm}$

$h = \underline{?}$



12. $x = \underline{?}$ (h)

$y = \underline{?}$