

Ch 8 Calendar		
Day	Date	Assignment (Due the next class!)
Monday	2/27/23 (A)	In class: 8.1 Notes
Tuesday	2/28/23 (B)	HW: 8.1 Homework
Wednesday	3/01/23 (A)	In class: 8.2 Notes
Thursday	3/02/23 (B)	HW: 8.2 Homework
Friday	3/03/23 (A)	In class: 8.3 Notes
Monday	3/06/23 (B)	HW: 8.3 Homework
Wednesday Thursday Note: ACT is on Tues: no school!	3/08/23 (A) 3/09/23 (B)	In class: Start Chapter 8 Project HW: Finish Chapter 8 Project Due next class! Worth 50 Test Points

HW Directions:

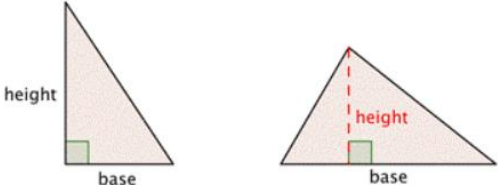
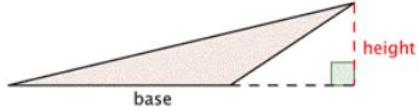
- Assignments are due the next class meeting.
- Late assignments will be reduced by 50%.
- The **last day** to turn in assignments from this chapter is on the day that the project is due.
- Blank worksheets and Notes packets can be found here: www.washoeschools.net/DRHSmath
- Check out our class YouTube channel:
<https://www.youtube.com/channel/UCh9fLvgw9metmQuIb6vQ5Zw>
- Show all work and draw the diagrams for each problem.
- Students who complete every assignment this semester will get a 2% bonus.
- For extra practice, visit www.khanacademy.org
- Check out www.mathguy.us for extra help.



8.1 Notes: Area of Triangles and Circles

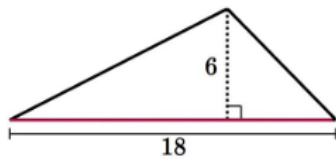
Objectives:

- Students will be able to find the area of a triangle.
- Students will be able to find the area of a circle.

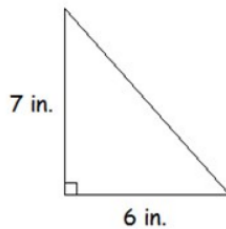
<p>Height of a Triangle</p>	<p>The height of a triangle forms a _____ with one side of the triangle. The height may not be an actual side of a triangle.</p>	
<p>Base of a Triangle</p>	<p>The base of a triangle is a _____ of the triangle that is perpendicular to the height.</p>	
<p>Area of a Triangle</p>	$A = \frac{1}{2}bh$	

Examples 1 – 3: Find the area of each triangle.

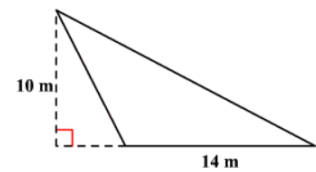
1)



2)

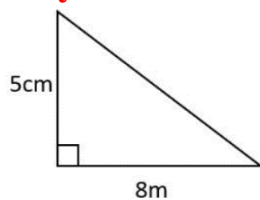


3)

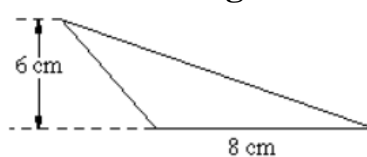


You try! For #4 – 6: Find the area of each triangle.

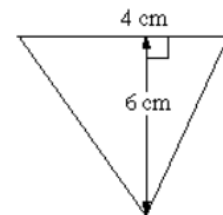
4)



5)

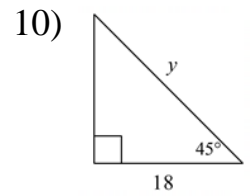
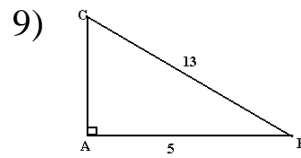
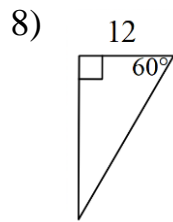
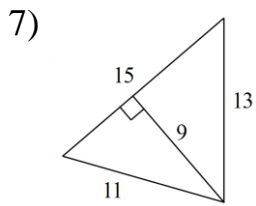


6)

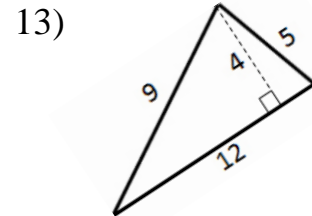
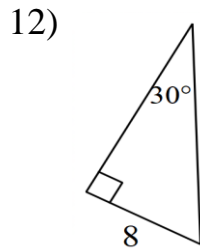
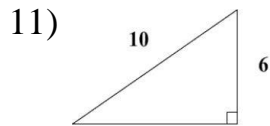


Sometimes it is more difficult to identify the height or base. You might have to use the Pythagorean Theorem, a triple, or a special triangle to find the side length you need.

For #7 – 10, find the area of each triangle. If needed, simplify radical answers.

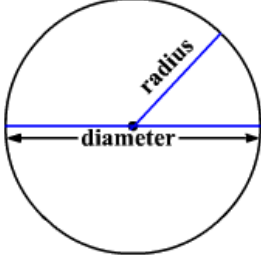


You try #11 – 13! Find the area of each triangle. If needed, simplify radical answers.



14) A triangle has an area of 40 in^2 . If the height of the triangle is 10, then what is the length of the base of the triangle?

- A) 4 in
- B) 30 in
- C) 2 in
- D) 8 in

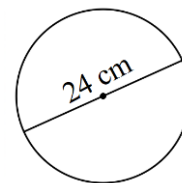
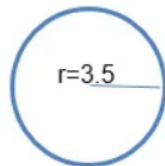
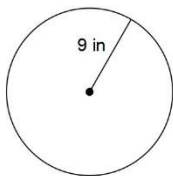
<p>Radius of a Circle</p>	<p>The radius of a circle connects the _____ of the circle and a point on the circle.</p>	
<p>Diameter of a Circle</p>	<p>The diameter of a circle is a segment passing through the _____ of the center with endpoints on the circle.</p>	
<p>Area of a Circle</p>	$A = \pi r^2$	

Examples 15 – 17: Find the area of each circle, in the requested form.

15) In terms of π .

16) Rounded to one decimal.

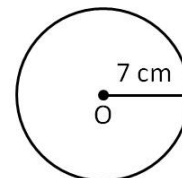
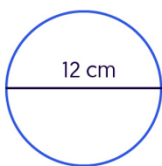
17) In terms of π .



You try #18 – 19! Find the area of each circle, in the requested form.

18) Rounded to one decimal.

19) In terms of π .



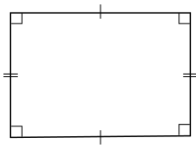
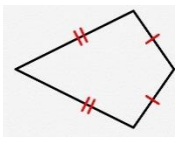
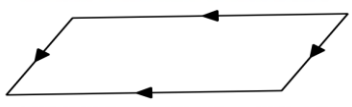
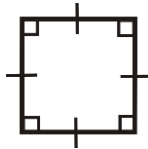
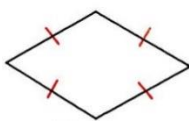
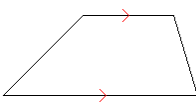
20) A circle has area of $36\pi \text{ cm}^2$. Find the length of the radius. Also, what is the length of the diameter?

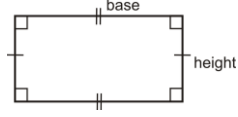
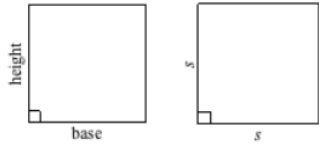
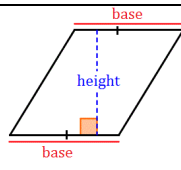
8.2 Notes: Area of Quadrilaterals

Objectives:

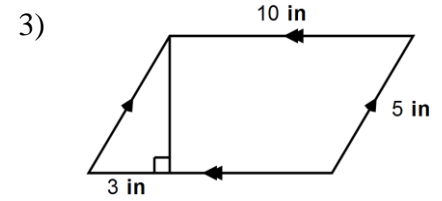
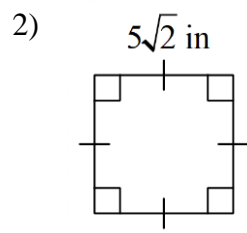
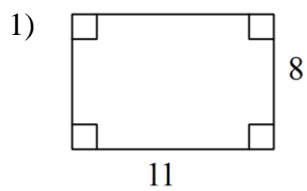
- Students will be able to identify quadrilaterals by their names.
- Students will be able to find the area of common quadrilaterals.

Do you know the names of quadrilaterals (4-sided figures)? Write the name in the box from each shape. Choose from: square, rectangle, parallelogram, rhombus, kite, and trapezoid.

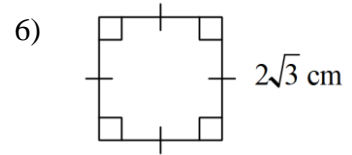
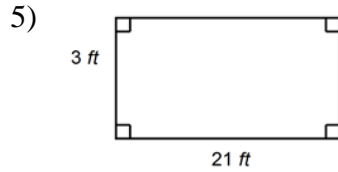
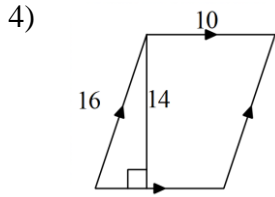
	
	
	

Area of a Rectangle	$A = bh$ or $A = lw$ Note: opposite sides are congruent.	
Area of a Square	$A = bh$ or $A = s^2$ Note: all sides are congruent.	
Area of a Parallelogram	$A = bh$ Note: opposite sides are congruent.	

Examples #1 – 3: Find the area of each quadrilateral. Identify the name of each shape, as well.

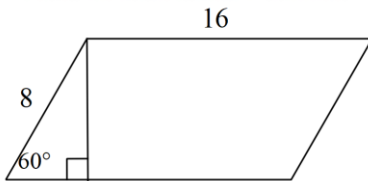


You try #4 – 6! Find the area of each quadrilateral. Identify the name of each shape, as well.



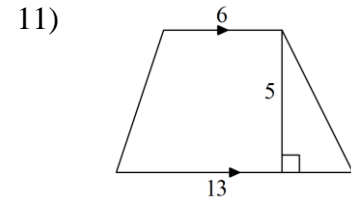
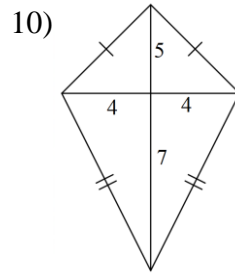
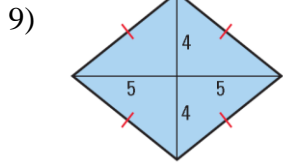
7) The area of a square is 50 square ft. Find the length of one side, rounded to one decimal place.

Challenge! 8) Find the area of the parallelogram shown. Simplify radical answers.

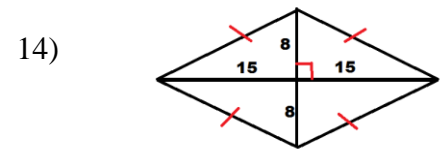
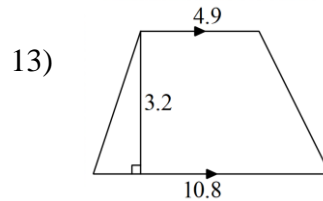
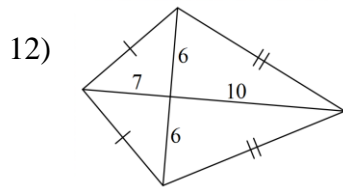


Area of a Rhombus	$A = \frac{1}{2}d_1 \cdot d_2$		
Area of a Kite	$A = \frac{1}{2}d_1 \cdot d_2$	rhombus	kite
Area of a Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$	$A = \frac{1}{2}d_1d_2$	
	Note: bases are the parallel sides		

Examples 9 – 11: Find the area of each quadrilateral. Identify the name of each shape, as well.

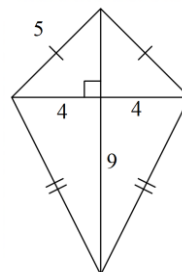


You try #12 – 14! Find the area of each quadrilateral. Identify the name of each shape, as well.



Example 15: A rhombus has an area of 28 ft^2 . If the measure of one diagonal is 16, then what is the measure of the other diagonal?

Challenge! Find the area of the kite shown.



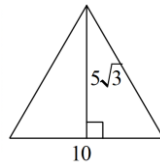
8.3 Notes: Area of Regular Polygons

Objectives:

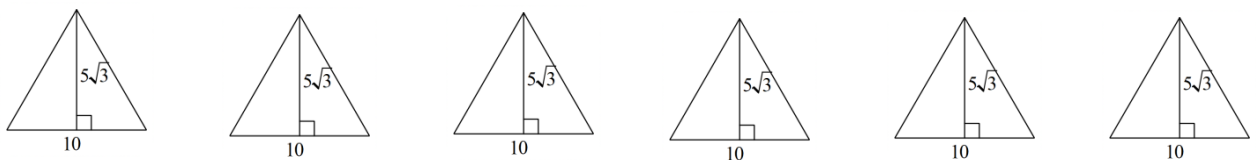
- Students will be able to name regular polygons by the sides.
- Students will be able to find the area of a regular polygon.

Exploration: Consider the triangle shown.

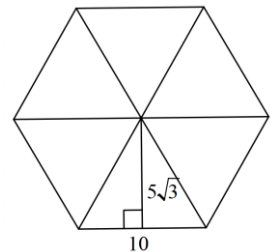
A. Find the area of the triangle. $A = \frac{1}{2}bh$

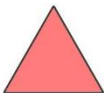

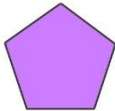
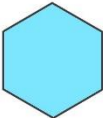

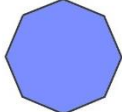
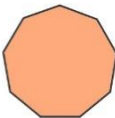
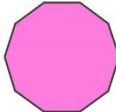



B. Imagine you had six of these exact same triangles. What would the combined area of all six triangles be?



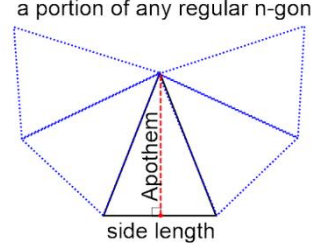
C. We could rearrange these triangles to form a hexagon (six-sided figure.) What would the area of this hexagon be?



Polygon	<p>A polygon is a _____ - sided figure made of _____ edges.</p> <p>Polygons are named by the # of sides.</p>	3 sides	4 sides	5 sides
				
		6 sides	7 sides	8 sides
				
		9 sides	10 sides	12 sides
				

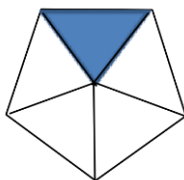
Examples 1 - 4: What is the name of a polygon with the number of specified sides? Try to do this without looking at the previous page.

- 1) 8 sides 2) 5 sides 3) 9 sides 4) 4 sides
- 5) 10 sides 6) 7 sides 7) 3 sides 8) 12 sides

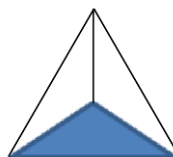
Regular Polygon	<p>A regular polygon has all sides that are _____, and all angles that are _____.</p> <p>In other words, a regular polygon is both equilateral and equiangular.</p>	<p>A quadrilateral is regular. What is a common name for this shape?</p> <p>A triangular is regular. What is a common name for this shape?</p>
Area of a Regular Polygon	<p>To find the area of a regular polygon, there are 2 methods.</p> <p>Option 1: Find the area of one triangle, and multiply by the number of _____ of the polygon.</p> <p>Option 2: Use the formula</p> $A = \frac{1}{2} aP$	$A = \frac{1}{2} aP$ <p style="text-align: center;">a portion of any regular n-gon</p> 

Examples 9 - 11: Find the area of each regular polygon, if the area of the shaded region is given.

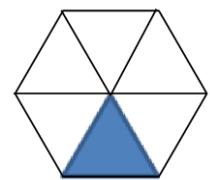
9) 15 in^2



10) 40 mm^2

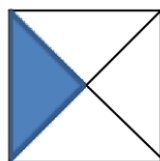


11) 8 cm^2

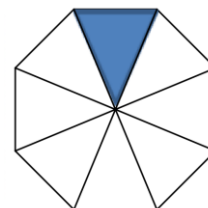


You try! For #12 - 13: Find the area of each regular polygon, if the area of the shaded region is given.

12) 120 mm^2

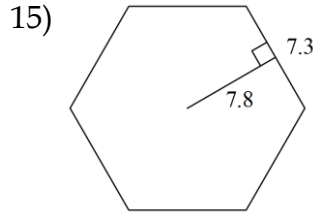
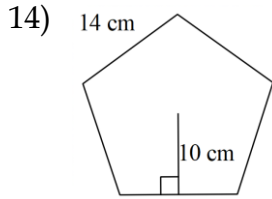


13) 11 ft^2

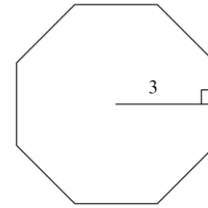


$$A = \frac{1}{2} aP$$

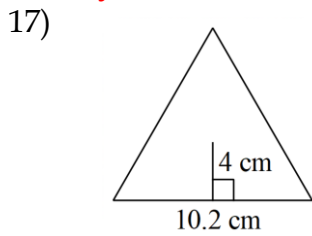
Examples 14 - 16: Find the area of each regular polygon.



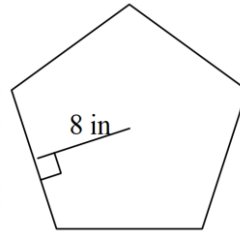
16) The perimeter is 30 inches.



You try! For # 17 - 18: Find the area of each regular polygon.

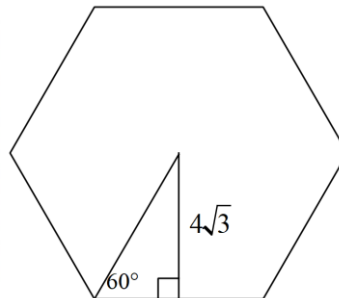


18) The perimeter is 65 inches.

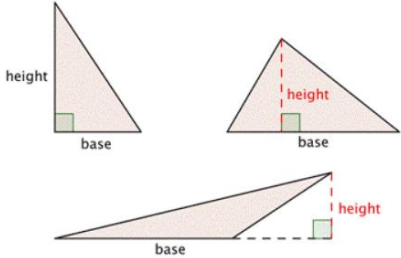
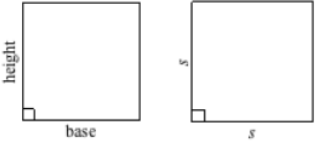
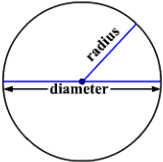
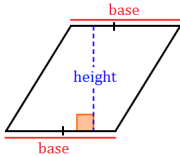
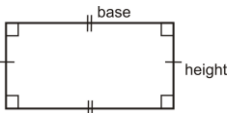
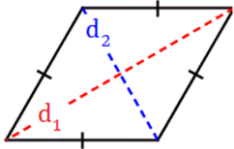
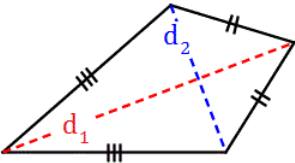
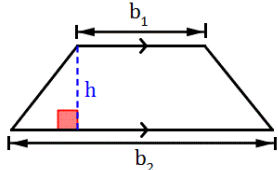


19) A regular decagon has one side of 12 inches, and the apothem is 9 inches. Find the area of the regular decagon.

20) Challenge: Find the area of the regular hexagon shown. *Hint: Use the special triangle shown to find the length of one side of the hexagon.*



Summary of Area Formulas

<p>Area of a Triangle $A = \frac{1}{2}bh$</p>		<p>Area of a Square $A = bh$ or $A = s^2$</p>	
<p>Area of a Circle $A = \pi r^2$</p>		<p>Area of a Parallelogram $A = bh$</p>	
<p>Area of a Rectangle $A = bh$ or $A = lw$</p>		<p>Area of a Rhombus $A = \frac{1}{2}d_1 \cdot d_2$</p>	
<p>Area of a Kite $A = \frac{1}{2}d_1 \cdot d_2$</p>		<p>Area of a Trapezoid $A = \frac{1}{2}h(b_1 + b_2)$</p>	
<p>Area of a Regular Polygon (option 1)</p>	<p>Find the area of one triangle, and then multiply by the number of side of the polygon.</p>	<p>Area of a Regular Polygon (option 2) $A = \frac{1}{2}aP$</p> <p><i>Note: P = perimeter</i></p>	<p>a portion of any regular n-gon</p> 