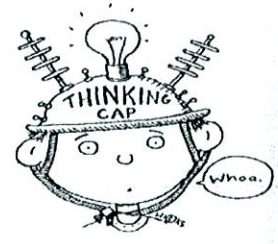
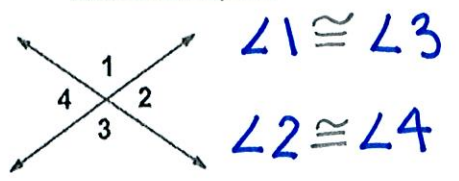


Lesson 11-1 (pages 612-616)

Angles & Line Relationships

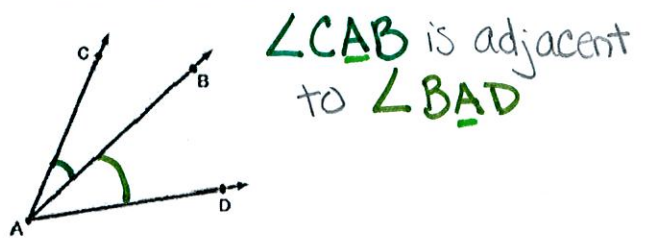


The Examples:

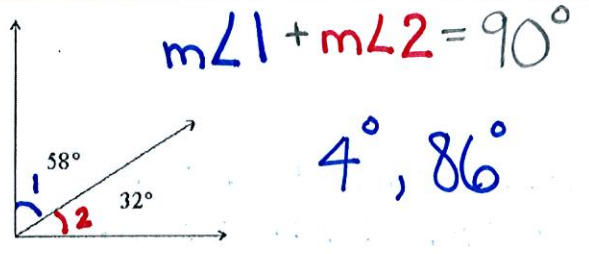


The Vocabulary:

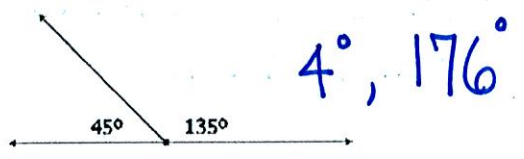
Vertical Angles:
When 2 lines intersect, the opposite angles are vertical angles.



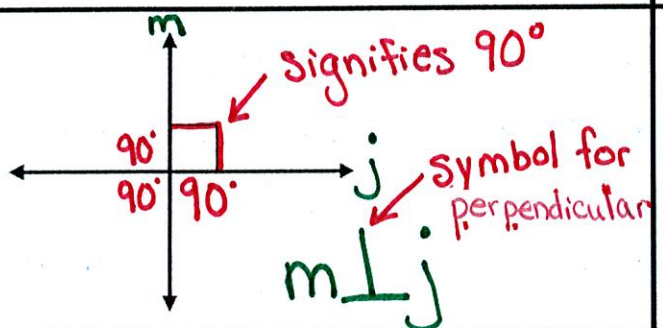
"next to"
Adjacent Angles:
Two angles that share
• a common vertex ($\cdot A$)
• a common side (\overline{AB})
*** They do NOT overlap**



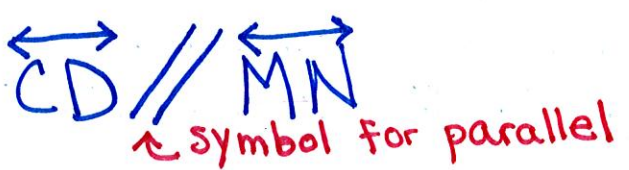
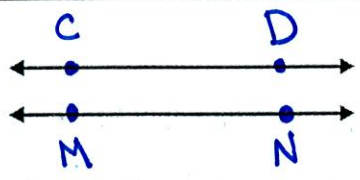
Complementary Angles:
Two angles that add up to 90°



Supplementary Angles:
Two angles that add up to 180°



Perpendicular Lines:
Two lines that intersect to form right (90°) angles.

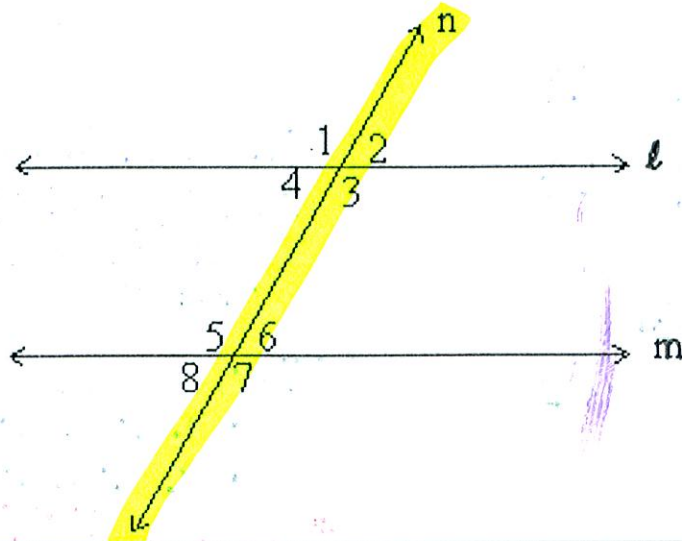


Parallel Lines:
Two lines that do NOT intersect and are equal distance apart

Name: _____ Date: _____ Period: _____

a line that intersects
↗ 2 parallel lines

Transversals



The Examples:

$$\angle 5 \cong \angle 3$$

$$\angle 4 \cong \angle 6$$

The Vocabulary:

Alternate Interior Angles:

Angles that are on opposite sides of the transversal and inside the parallel lines

$$\angle 8 \cong \angle 2$$

$$\angle 1 \cong \angle 7$$

Alternate Exterior Angles:

Angles that are on opposite sides of the transversal and outside the parallel lines

$$\angle 1 \cong \angle 5$$

$$\angle 4 \cong \angle 8$$

$$\angle 2 \cong \angle 6$$

$$\angle 3 \cong \angle 7$$

Corresponding Angles:

two angles that are in the same position on the parallel lines in relation to the transversal

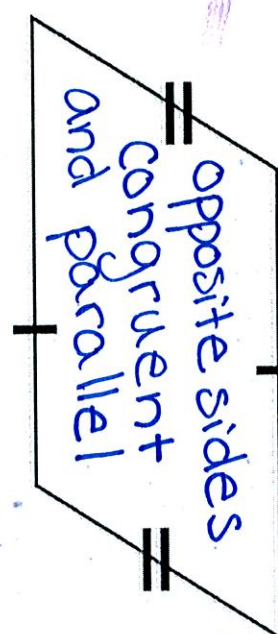
4/6/12

Lesson 11-4 (pgs. 612-616)

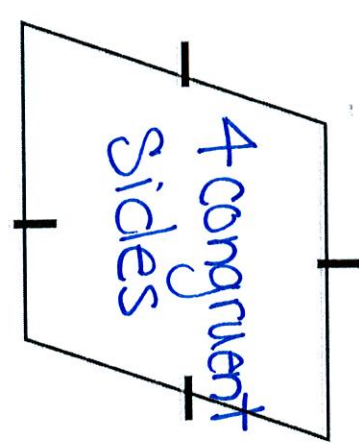
4 → **Quadrilaterals** → Side

a figure that has 4 sides and 4 angles

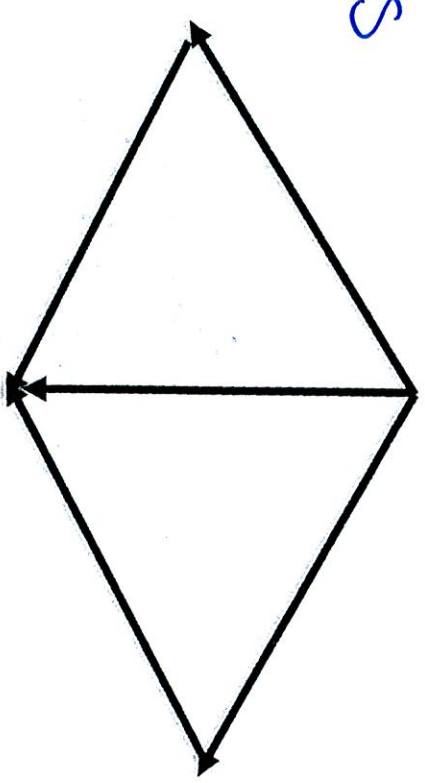
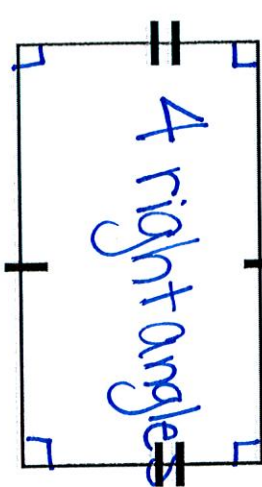
Parallelogram



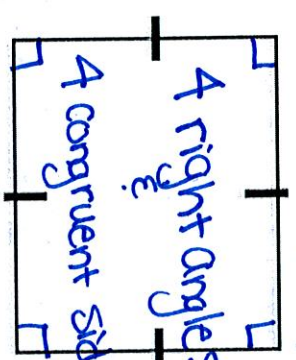
Rhombus



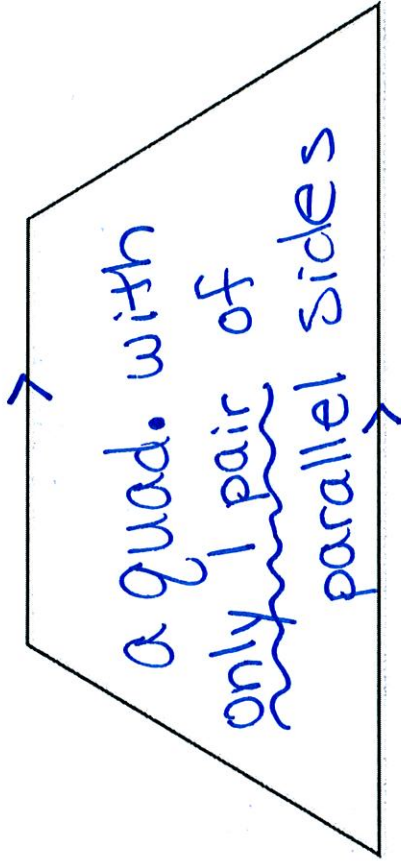
Rectangles



4 right angles
4 congruent sides
Square



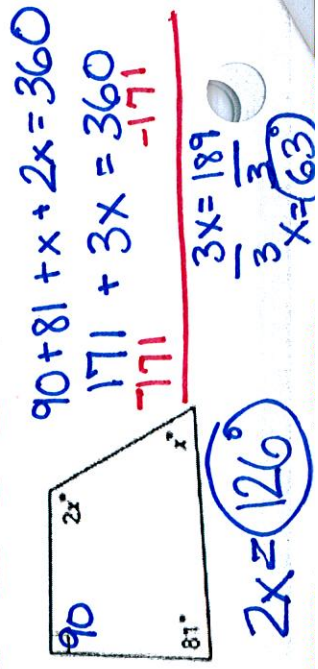
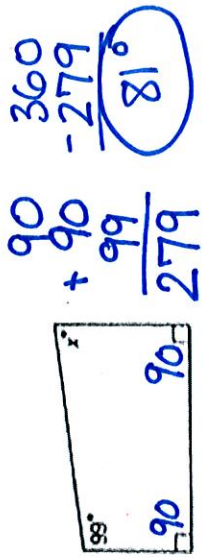
Trapezoid



Determine whether each statement is sometimes, always, or never true.

- always 1) All parallelograms are quadrilaterals. \rightarrow 4 sides ~~always~~
- always 2) All squares are rectangles. \rightarrow 4 right angles
- always 3) All rectangles are parallelograms. \rightarrow opposite sides are \cong & \parallel
- sometimes 4) All rhombi are squares. \rightarrow 4 right \angle 's & 4 \cong sides
- never 5) All trapezoids are parallelograms.

Find the value of each missing angle. * (All four angles = 360°)



Lesson 11-5 (pgs. 617-622)

Definitions:

a many-sided figure

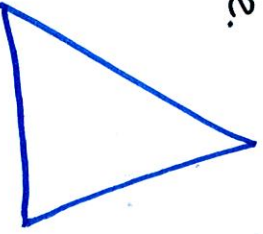
Characteristics:

- many-sided (3+)
- closed
- straight
- simple

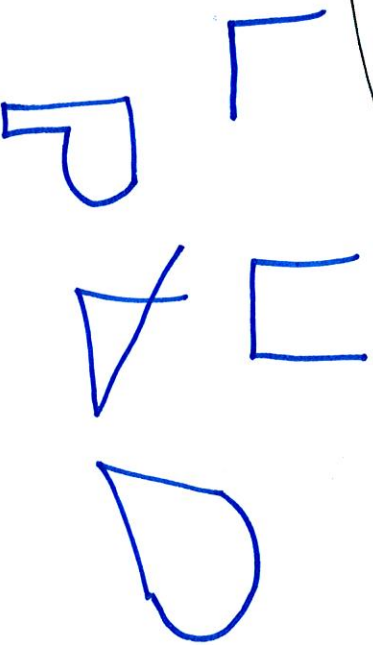
Polygons


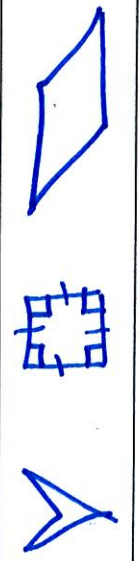
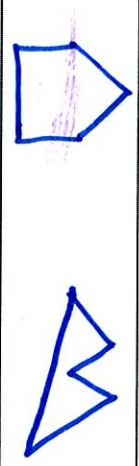
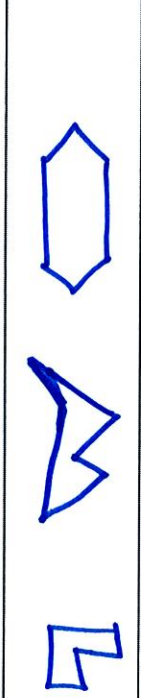

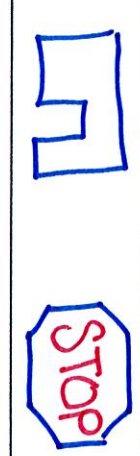
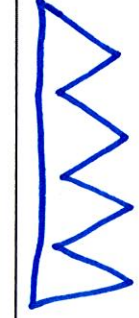

Examples:

Show examples on the backside.



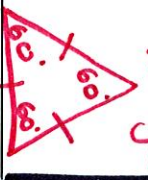
Non-Examples:



Number of Sides	Picture	Type of Polygon
3		Triangle
4		Quadrilateral
5		Pentagon
6		Hexagon
7		Heptagon
8		Octagon
9		Nonagon
10		Decagon

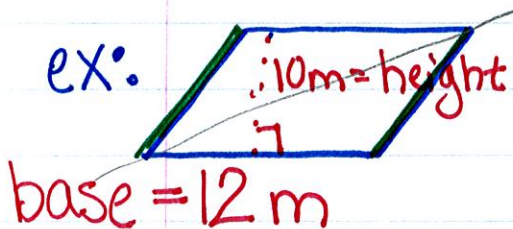
Regular Polygon: ex: equilateral triangle
 all sides congruent
 AND all angles congruent

Find the sum of the measures of the interior angles
 (5-2)180 = 540° # of sides
 ex: 12-gon (12-2)180 = 1,800°
 1800 ÷ 12 = 150°



Lesson 11-6

3/23/11 Area of Parallelograms, Triangles
and Trapezoids (p624-630)



$$A = bh$$

$$A = 12 \cdot 10$$

$$A = 120\text{m}^2$$

① write the formula

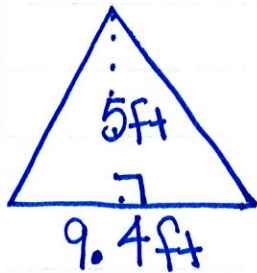
② Substitute

③ Solve with label

* Area labels are always squared

Area: the number of square units needed to cover the surface

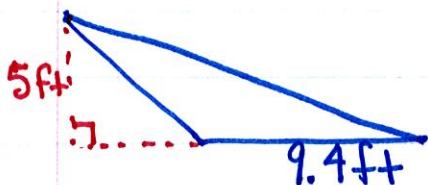
ex:



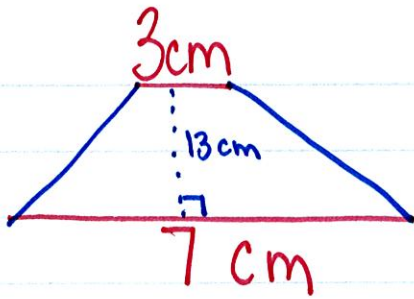
$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2} \times 9.4 \times 5$$

$$A = 23.5\text{ft}^2$$



ex:



$$A = \frac{1}{2}(b_1 + b_2)h$$

$$A = \frac{1}{2}(3 + 7)13$$

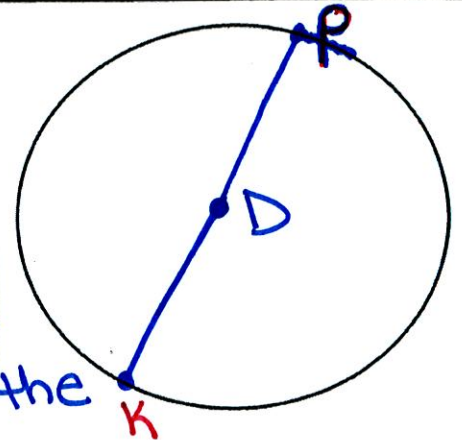
$$A = 65 \text{ cm}^2$$

2 radii = 1 diameter
1 radius = $\frac{1}{2}$ diameter

Lesson 11-7 (pgs. 631-635)

Circles and Circumference

Circle: an infinite amount of connected points that are equidistant from the center point



 D
↑
symbol

Radius: a line segment connecting the center point to a point ON the circle

 r

ex: \overline{DK} or \overline{KD}

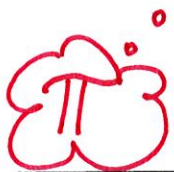
ex: \overline{DP} or \overline{PD}

Diameter: a line segment connecting two points ON the circle and passing through the center point

 d

ex: \overline{KP} or \overline{PK}

Pi: a ratio comparing the circumference to the diameter

 π

ex: $\frac{C}{d} = \pi = 3.14$ or $3\frac{1}{7}$

 $\frac{22}{7}$

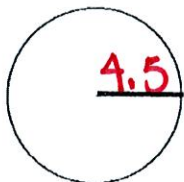
Circumference: the distance around a circle

 C

$$C = 2\pi r$$

$$C = 2 \times 3.14 \times 4.5$$

$$C = 28.26 \text{ ft}$$

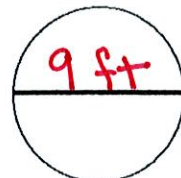


$\pi = 3.14$

$$C = \pi d$$

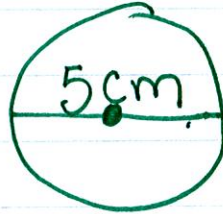
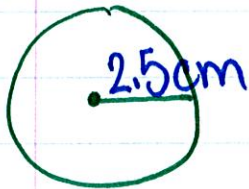
$$C = 3.14 \times 9$$

$$C = 28.26 \text{ ft}$$



Lesson 11-8

3/25/11 Area of Circles (p 636-641)



... if $d=5$
then $r=2.5$

$$A = \pi r^2$$

$$A = 3.14 \times 2.5^2$$

$$A = 19.625 \text{ cm}^2$$



$$A = \left(\frac{N}{360}\right) \pi r^2 \text{ or } A = \frac{N}{360} (\pi r^2)$$

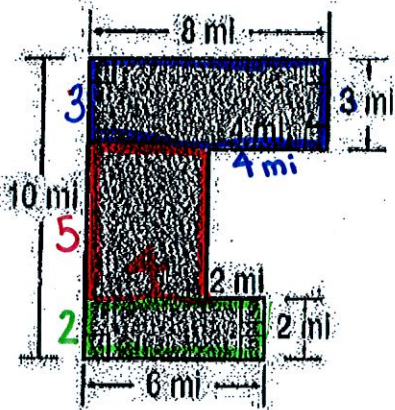
$$A = \left(\frac{108}{360}\right) 3.14 \times 2.8^2$$

Lesson 11-9 (pgs. 642-647)

Area of Composite Figures

Composite Figure: a figure made up of two or more shapes

Find the area of the figure.



$$A = bh + bh + bh$$

$$A = 8 \cdot 3 + 4 \cdot 5 + 2 \cdot 6$$

$$A = 24 + 20 + 12$$

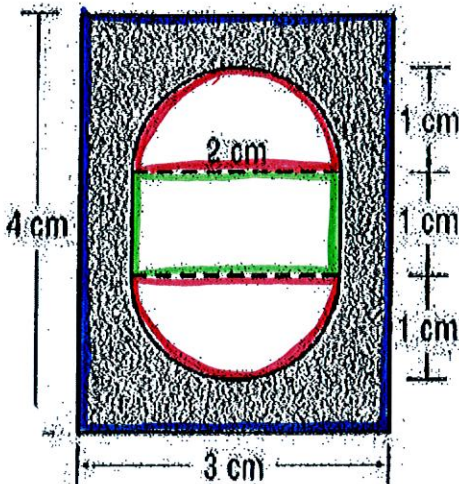
$$A = 56 \text{ mi}^2$$

① Decide on your figures

② Substitute to find the area of each figure

③ Solve... don't forget your label
😊

Find the area of the shaded region.



"enclosing shape" Area — "Non-shaded" Area

Rectangle — "Oval-ish"

$$A = bh - (bh + \pi r^2)$$

$$A = 4 \cdot 3 - (2 \cdot 1 + 3.14 \times 1^2)$$

$$A = 12 - 5.14 \text{ (optional step)}$$

$$A = 6.86 \text{ cm}^2$$