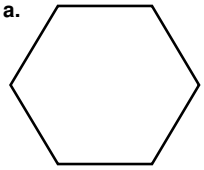
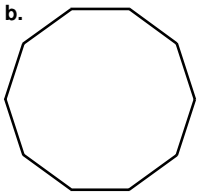
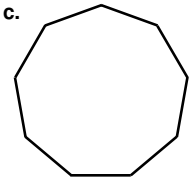
Equal Angles: Classwork

1. Find the interior angle sum of each of the following polygons. Show your work.

a. 

b. 

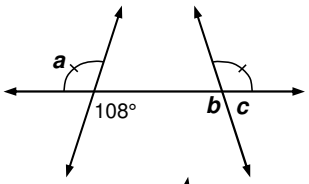
c. 

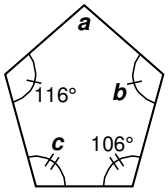
d. 23-sided polygon

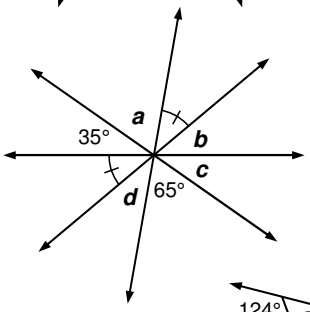
2. Suppose each of the polygons in #1 is a regular polygon. Find the measure of one interior angle for each of the polygons (round to the nearest tenth if necessary). Show your work.

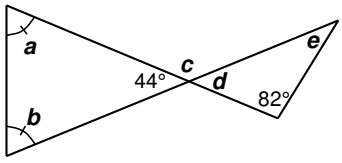
a. **b.** **c.** **d.**

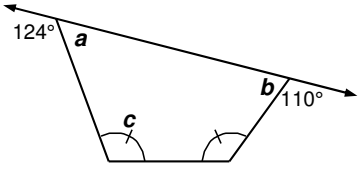
3. Calculate each unknown angle measure without using a protractor.





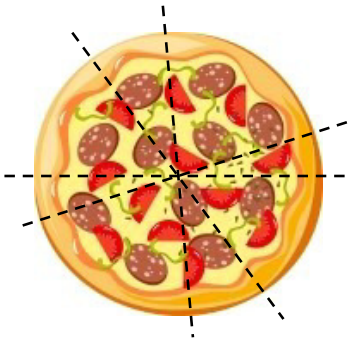






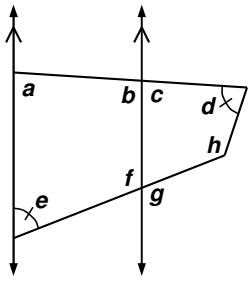
Possible Answers	
28°	70°
35°	72°
36°	76°
36°	85°
40°	93°
40°	96°
42°	104°
44°	106°
49°	108°
50°	108°
54°	116°
56°	117°
65°	128°
68°	136°
68°	138°

4. Murphy ordered a pizza, but he noticed that the pizza slices were not all cut the same size! Murphy proudly states, "based on the geometry that I learned in math class, I know that there are pairs of slices that are the same size!" Explain what he means.



5. Complete the Statements/Reasons table and list how you determined each unknown angle.

Find the missing angle measures if $m\angle c = 88°$ and $m\angle g = 110°$.

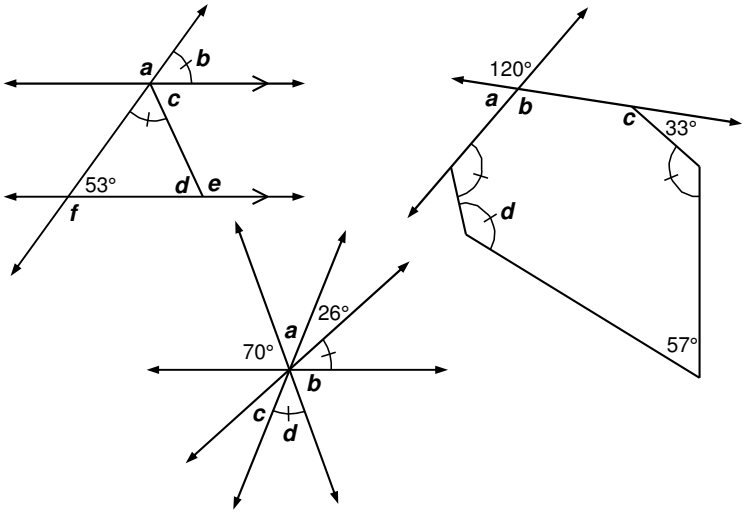


Statements	Reasons
1. $m\angle f =$	
2. $m\angle b =$	
3. $m\angle a =$	
4. $m\angle e =$	
5. $m\angle d =$	
6. $m\angle h =$	

6. A triangle has its largest interior angle 14° more than triple the measure of its smallest interior angle. The third angle is 2° less than double the measure of the smallest angle. What are the three angles?

Let x = the measure of the smallest angle. Write and solve an equation based on the interior angle sum.

7. Calculate each unknown angle measure without using a protractor.



Possible Answers	
26°	74°
26°	74°
28°	89°
42°	106°
42°	108°
47°	117°
53°	120°
56°	127°
56°	127°
60°	132°
64°	140°
70°	147°

8. Use what you know about interior angle sums to find the measure of each angle.
Show your algebra work.