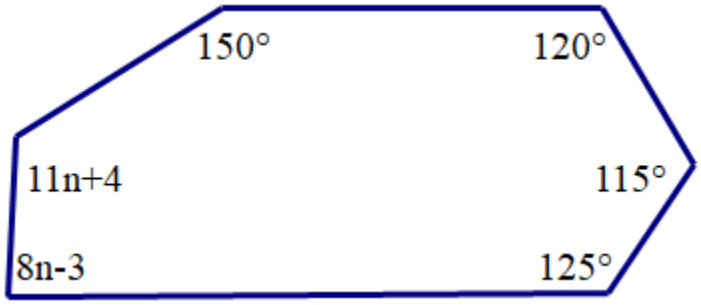
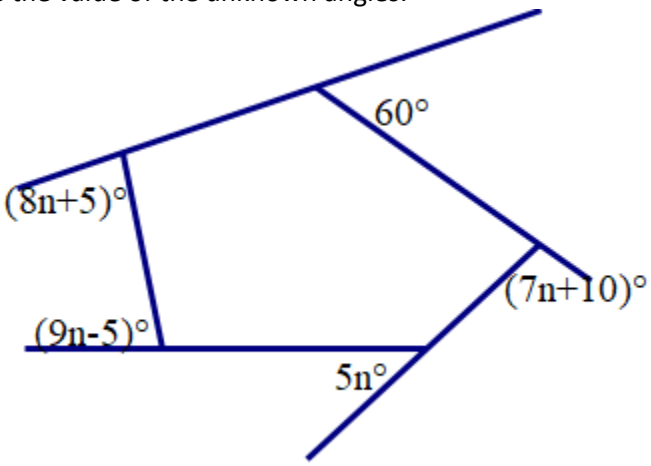
Geometry Quiz 6:1-6:2 Name:_____

Date:_____

1. In the images below, determine the value of n. Then determine the value of the unknown angles.





2. The sum of the measures of the interior angles of an n-gon is 2,160°. Determine the number of sides in the n-gon.

3. The sum of the measure of the interior angles of a REGULAR n-gon is 3,240°. Determine the number of sides in the n-gon.

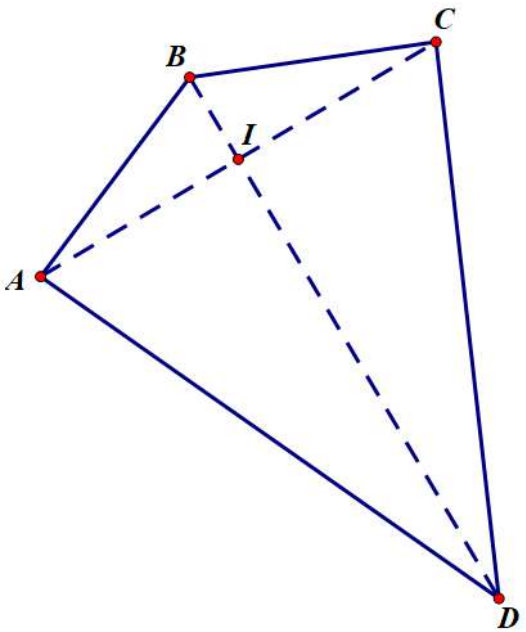
   a. Determine the measure of each interior angle.

   b. Determine the measure of each exteior angle.

KITES and TRAPEZOIDS

4. Use the given information and what you know about kites to complete the information below related to the kite on the right.

$\overline{AI} = 12$ $\overline{BC} = 13$ $\overline{DI} = 37$ $m\angle ABD = 67°$ $m\angle CDI = 19°$



a. $\overline{AB}$

b. $\overline{CD}$

c. $\overline{AD}$

d. $\overline{CI}$

e. $\overline{BI}$

f. $\overline{BD}$

g. $\overline{AC}$

h. $m\angle ABC$

i. $m\angle BCD$

j. $m\angle ADC$

k. $m\angle CBD$

l. $m\angle BAI$

m. Perimeter of the kite

n. $m\angle IDA$

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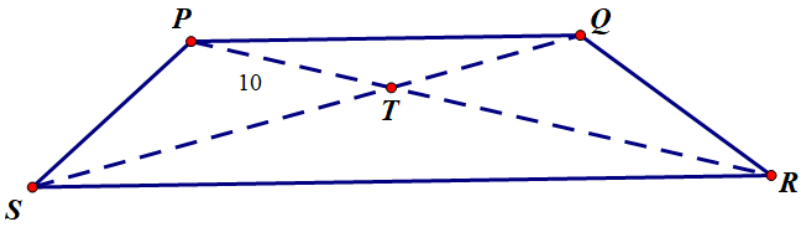
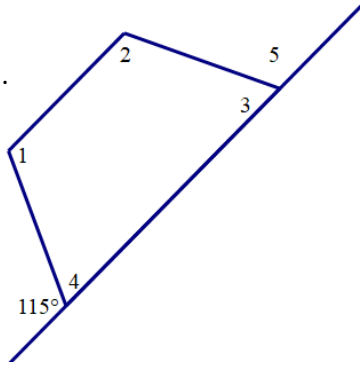
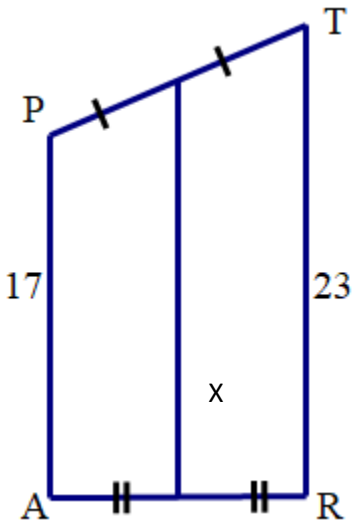
5. Given trapezoid PQRS and $\overline{QS} = 24$ what must the measure of $\overline{TR}$ be in order for PQRS to be an ISOSCELES trapezoid?



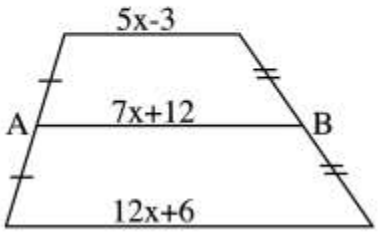
6. Given the trapezoid is isosceles, determine the angle measure of the 5 unknown angles.



7. Given that $\overline{TR} \parallel \overline{PA}$ determine the value of x.



8. Find the length of the longer base of the trapezoid below. Segment AB is a midsegment of the trapezoid.



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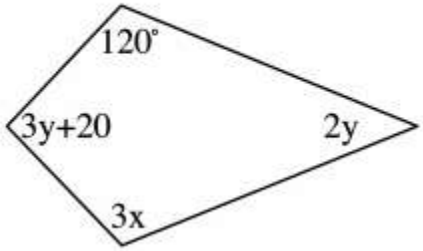
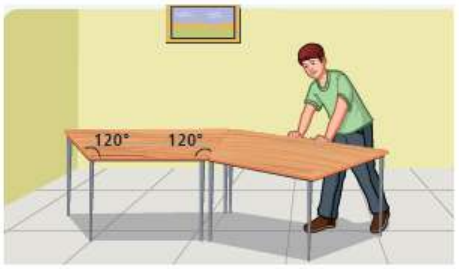
9.

Find the values of x and y for the kite below.



10.

The tables of a conference room are the same size, and all have the shape of a trapezoid. The conference coordinator wants to arrange the tables so they form a regular polygon. Complete parts "a–c" below.

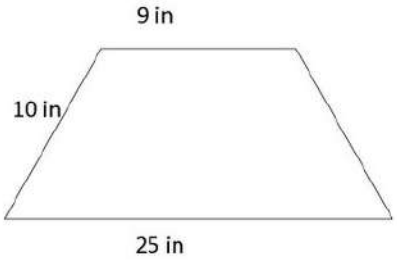


a. Can the tables be arranged to form a regular polygon? Explain.

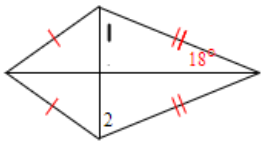
[▼] When the tables are put together, the interior angle measure where each table meets is [ ]. Find the number of sides of a regular polygon with interior angles measuring [ ]° by solving the equation [▼] = [ ], which results in n = [ ]. Since n is a [▼] a [▼] be formed from placing the tables together.

11.

Find the altitude of this isosceles trapezoid:



12. Find the measures of the numbered angles in the kite.



The figure is not drawn to scale.

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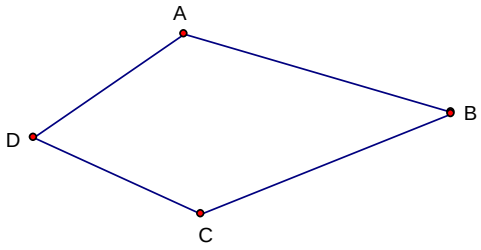
13. Polygon ABCD is a kite. If AB = 12 and AD = 4 find BC, DC, and the perimeter.
BC = _____ DC = _____



14. The perimeter of this kite is 116. Find x.