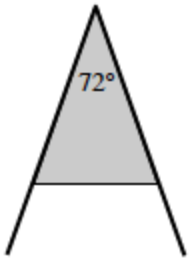
Ch. 7 Closure

WHAT HAVE I LEARNED?

Most of the problems in this section represent typical problems found in this chapter. They serve as a gauge for you. You can use them to determine which types of problems you can do well and which types of problems require further study and practice. Even if your teacher does not assign this section, it is a good idea to try these problems and find out for yourself what you know and what you still need to work on.

Solve each problem as completely as you can. The table at the end of the closure section has answers to these problems. It also tells you where you can find additional help and practice with problems like these.

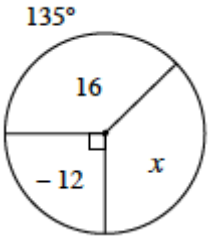
CL 7-147. Julius set his hinged mirror so that its angle was 72° and the core region was isosceles, as shown below.



a. How many sides did his resulting polygon have? Show how you know.

b. What is another name for this polygon?

CL 7-149. Examine the spinner below. Use the Spinner eTool with labels to create spinners to test your ideas!



a. Find the expected value of the spinner if $x = 4$.

b. Find the expected value of the spinner if $x = -8$.

c. Find x so that the expected value of the spinner is 6.

CL 7-150. *ABCD* is a parallelogram. If $A(3, -4)$, $B(6, 2)$, $C(4, 6)$, then what are the possible locations of point D? Draw a graph and justify your answer.

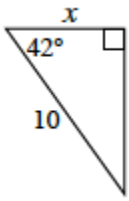
CL 7-151. Each problem below gives the endpoints of a segment. Find the coordinates of the midpoint of the segment.

a. (−3, 11) and (5, 6)

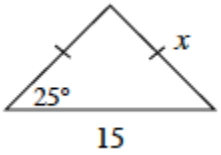
b. (−4, −1) and (8, 9)

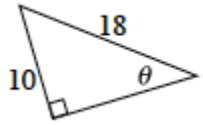
CL 7-152. For each diagram below, solve for the variable.

a.



b.



c. 

CL 7-153. On graph paper, draw quadrilateral *MNPQ* if *M*(1, 7), *N*(−2, 2), *P*(3, −1), and *Q*(6, 4).

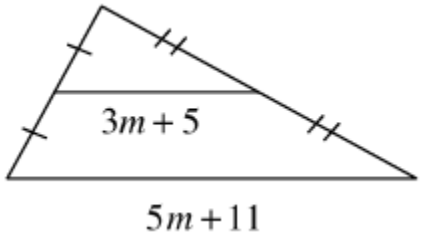
a. Find the slopes of $\overline{MN}$ and $\overline{NP}$. What can you conclude about $\angle MNP$?

b. What is the best name for *MNPQ*? Justify your answer.

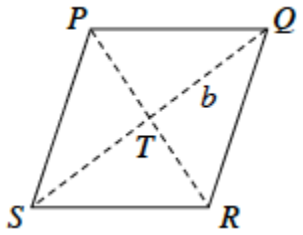
c. Which diagonal is longer? Explain how you know your answer is correct.

d. Find the midpoint of $\overline{MN}$.

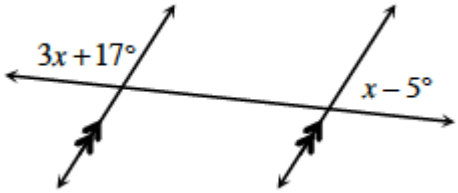
CL 7-154. Examine the geometric relationships in each of the diagrams below. For each one, write and solve an equation to find the value of the variable. Name any geometric property or conjecture that you used.

a. 

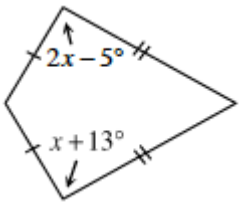
b. *PQRS* is a rhombus with perimeter = 28 units. *PR* = 8 units, find *b* (*QT*)



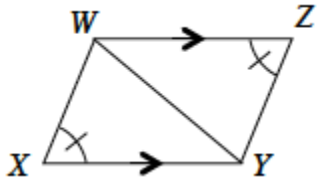
c.



d.



CL 7-155. Given the information in the diagram below, prove that $\Delta WXY \cong \Delta YZW$ using either a flowchart or a two-column proof.



CL 7-156. MUST BE, COULD BE

Here are some more challenges from Mr. Quincey. For each description of a quadrilateral below, say what special type the quadrilateral *must be* and/or what special type the quadrilateral *could be*. Remember: Some descriptions may have no *must be* statements, and some descriptions may have many *"could be* statements!

a. The diagonals of my quadrilateral are equal.

b. My quadrilateral has one right angle.

c. My quadrilateral has one pair of equal adjacent sides.

CL 7-157. Check your answers using the table at the end of the closure section. Which problems do you feel confident about? Which problems were hard? Use the table to make a list of topics you need help on and a list of topics you need to practice more.