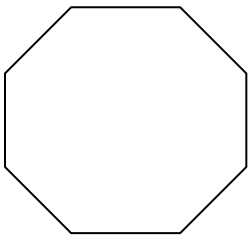
**Precalculus: Test Review of Trig. Laws #2** **Name** _____

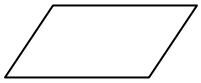
**Draw and label a picture and then solve the following story problems. Nearest $100^{th}$.**

1. Kevin has a triangular dog pen with sides of 9 meters, 8meters, and 15meters. Find the area that his dog, Spot, has to run.

2. Calculate the area of a regular octagon inscribed in a circle of radius 40 cm.

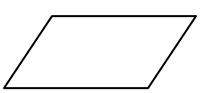


3. Adjacent sides of a parallelogram have lengths of 6 cm and 7 cm, and the measure of the included angle is 30º. Find the area of the parallelogram.

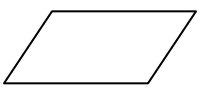


4. A fire tower at point A is 30 km north of a fire tower at point B. A fire at point F is observed from both towers. If <FAB=54º and <ABF=31º, find AF.

5. A parallelogram has a 50° angle and sides 6 cm and 10 cm long. How long is each diagonal?

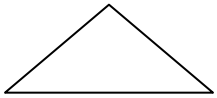


First Diagonal

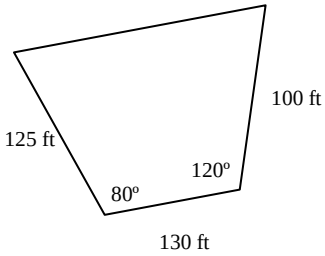


Second Diagonal

6. A triangular lot has sides 120 ft, 150 ft and 100 ft long. Find the largest angle of the lot.



7. In Kalamazoo, rural undeveloped land is taxed at a rate of $115 per acre. Find the area of the plot of land below and then calculate the tax. (Hint: 1 acre=43,560 $ft^2$)




8. Lauren flew her plane 500 km north, turned on a course 20°, and flew 1300 km. How far is Lauren from her starting point?
A labeled diagram must be included with trig. work shown!

9. After leaving an airport, Eric flies for 1.5 hours at a speed of 250 km/hr on a course of 80º. He then flies for 2 hours at a speed of 225 km/hr on a course of 40º. At this time, how far is Eric from the airport?

10. Two ships leave a port on a course that differs by 70º. One ship travels at 30 mph and the other at 25 mph. How far apart are they after 3 hours?