Extra Practice: Section 6.1 and 6.2

1. Write down the conditions needed in order to use the following Laws (i.e., SSS, AAS, SAS, ASA, SSA):

Law of Sines:

Law of Cosines:

2. Solve triangle ABC if B = 20°, C = 31°, and b = 210. To the nearest thousandth.

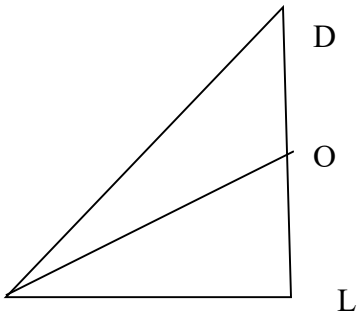
3. Find all 3 angles of triangle FOG if f = 25 o = 80 g = 60. To the nearest thousandth.

4. Solve triangle PIG if P =150°, p = 150, g = 30. To the nearest thousandth.

5. Solve triangle ABC if a =12.4, b = 8.7, and B = 36.7°. To the nearest thousandth.

6. A 10 foot ladder leans against a wall. If the ladder makes an angle of 50° with the ground, how many feet above the ground is the ladder touching the wall? To the nearest thousandth.

7.




IO is a median of triangle IDL.

If i = 5 inches, d = 7 inches, l = 8 inches, find the length of IO to the nearest tenth of an inch.
*Do NOT assume a right angle is given.

8. The sides of an isosceles triangle measure 12, 12, and 10. Find the measure of the vertex angle rounded to the nearest tenth of a degree.

9. Given ΔTXP where $< X = 52°$, $p = 8$, and $x = 7$, find <u>all</u> possible measures of < P. Round all angles to the nearest tenth of a degree.

10. Given triangle ABC, and B =48º, C = 82°, and c = 17 feet. Find A, a, and b. Round all sides to two decimal places and angle to nearest degree.

11. Given triangle XYZ, and x = 10, y = 14, and z = 17. Find the measure of all of the angles to the nearest thousandth.

12. Find the area of triangle XYZ in problem #11. Round answer to 2 decimal places.

13. Two men 500 feet apart observe a hill between them. The respective angles of elevation to the top of the hill are 72.5º and 48.6°. Find the height of the hill to two decimal places.

14. The longer diagonal of a parallelogram is 26 inches long and forms angles of 41° and 28° with its adjacent sides. Find the lengths of the sides to two decimal places.

15. A triangular plot of ground has sides 87 feet and 94 feet on two streets, which intersect at an angle of 79°. Find the area and perimeter of the plot. Round final answers to two decimal places.

16. Two submarines starting from the same point cruise for two hours, one covering 30 mph and the other 40 mph. If their courses diverge by 40°, how far apart are they at the end of two hours? Round final answer to two decimal places.

17. An isosceles triangle has a base of length 24 feet. If the vertex angle measures 54°, what is the perimeter of the triangle? Round final answer to two decimal places

18. Find the area of a regular octagon inscribed in a circle of radius 12 inches. Round final answer to two decimal places.

Solutions:

1. Law of Sines: AAS, SSA, ASA ; Law of Cosines: SSS, SAS
2. $\angle A = 129^\circ,\ a = 477.167,\ c = 316.233$
3. $\angle F = 12.429^\circ,\ \angle O = 136.469^\circ,\ \angle G = 31.102^\circ$
4. $\angle I = 24.261^\circ,\ i = 123.268,\ \angle G = 5.739^\circ$
5. TRIANGLE 1: $\angle A = 58.407^\circ,\ \angle C = 84.893^\circ,\ c = 14.5$
6. 7.660 feet
7. 7.1 inches
8. $49.2^\circ$
9. $64.2^\circ, 115.8^\circ$
10. $\angle A = 50^\circ, a = 13.15, b = 12.76$
11. $< X = 36.019^\circ, < Y = 55.414^\circ, < Z = 88.567^\circ$
12. 69. 98 square units
13. 417.74 feet
14. 13.07 inches and 18.27 inches
15. area: 4013. 87 $ft^2$ perimeter: 296. 26 feet
16. 51. 44 miles
17. perimeter: 76.86 feet
18. 407. 29 square units