

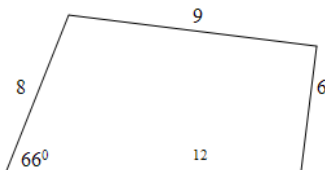
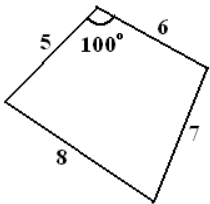
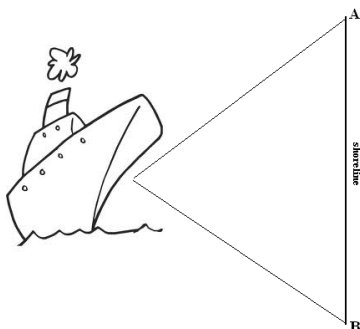
Unit 3 Wkst E: Review - Oblique Triangles and Applications

Show work on a separate sheet of paper.**1. Determine the number of solutions (triangles) for each of the following (do not solve)**

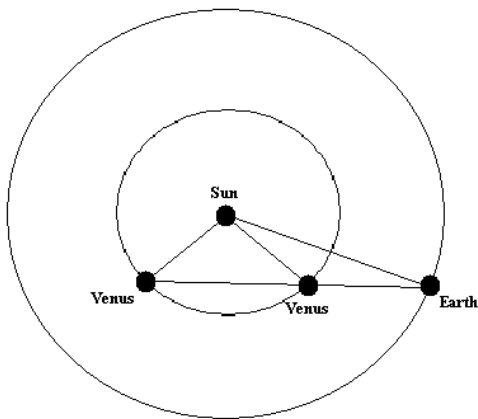
- | | | |
|---------------------|------------|------------|
| a.) $R = 71^\circ$ | $r = 43$ | $s = 52$ |
| b.) $G = 14^\circ$ | $t = 11.7$ | $g = 5.6$ |
| c.) $J = 108^\circ$ | $j = 37.5$ | $k = 32.6$ |
| d.) $H = 62^\circ$ | $h = 85.5$ | $g = 61.7$ |
| e.) $p = 2$ | $e = 3$ | $g = 6$ |

2. Solve following triangles: (include a sketch, list type of given information i.e. SSS, and a table of results.)

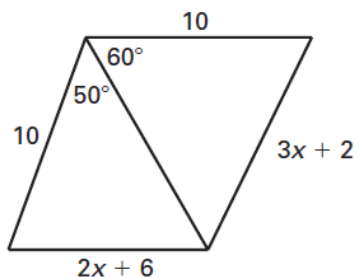
- | | | |
|--------------------|----------------|----------|
| a.) $P = 43^\circ$ | $Q = 97^\circ$ | $p = 7$ |
| b.) $M = 41^\circ$ | $m = 11$ | $n = 13$ |
| c.) $T = 55^\circ$ | $y = 3$ | $p = 10$ |
| d.) $r = 7$ | $e = 8$ | $d = 3$ |

3. Find the area of $\triangle TAB$ if $t = 4$ inches, $a = 9$ inches, and $b = 8$ inches.**4. Find the area of the $\triangle PEG$ if $p = 13$, $e = 6$, and $G = 18^\circ$** **5. Find the area of the following figure. (Not drawn to scale.) Show calculator set ups and answer. Use Heron's Formula if your information allows.****6. Find the area of the following figure. (Not drawn to scale.) Show calculator set ups and answer. Use Heron's Formula if your information allows.****7. A boat is cruising the ocean off a straight shoreline. Points A and B are 120 mi apart on the shore as shown. It is found that $A = 42.3^\circ$ and $B = 68.9^\circ$. Find the shortest distance from the boat to the shore.**

8. A parallelogram has sides of lengths 3 and 5 with one angle measuring 50° . Find the lengths of the diagonals.
9. A fisherman leaves his home port at a compass heading of 290° . He travels 30 mi and reaches Egg Island. The next day he sails at a compass heading of 10° for 50 mi, reaching Forrest Island.
- Draw a sketch:
 - Find the distance between the fisherman's home port and Forrest Island
 - Find the compass heading from Forrest Island back to his home port.
10. Venus orbits the sun inside the earth's orbit. The distance from the sun to Venus is 0.723 Astronomical Units (AU). The distance from earth to the sun is 1 AU. Find the two distances (AU) to Venus from earth when the angle between the line of sight to the sun and Venus from Earth is 39.4° .

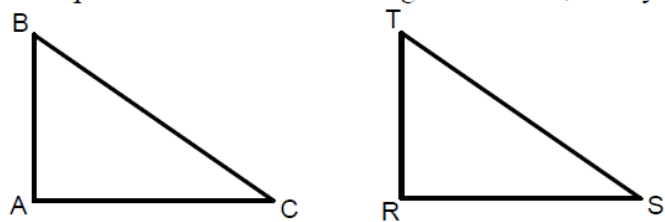


11. The angle of elevation to the top of a building is 21° . At a point 80 feet closer, the angle of elevation to the top of the same building is 33° . Approximate (to the hundredth) the height of the building.
12. Two ships leave port at 8:00 am. The first ship heads at a compass heading of 335° with a speed of 18 knots and the second heads 171° at a speed of 22 knots. How far apart are the ships at 2:00 pm?
13. **SKIP - No longer in Unit 3.** Determine the inequality that describes the restrictions on x .



14.

I. Complete each statement using sometimes, always, or never.



1. If $\overline{AB} \cong \overline{RS}$ and $\overline{BC} \cong \overline{ST}$, then $\overline{AC}$ is _____ $\cong$ to $\overline{RT}$.
2. If $\overline{AB} \cong \overline{RS}$ and $\overline{AC} \cong \overline{RT}$, then $m\angle A$ is _____ $=$ to $m\angle R$.
3. If $\overline{AB} \cong \overline{RS}$, $\overline{AC} \cong \overline{RT}$, and $\angle A \cong \angle R$, then $\overline{BC}$ is _____ $\cong$ to $\overline{ST}$.
4. If $\overline{AC} \cong \overline{RT}$, $\overline{BC} \cong \overline{ST}$, and $AB > RS$, then $m\angle C$ is _____ $>$ $m\angle T$.
5. If $\overline{AC} \cong \overline{RT}$, $\overline{BC} \cong \overline{ST}$, and $m\angle C > m\angle T$, then AB is _____ $>$ RS .
6. If $m\angle A = m\angle R$, $m\angle B = m\angle S$, and $AB > RS$, then AC is _____ $<$ RT .