## Trig. Identities (Law of Sines \& Law of Cosines

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

1. (SSA) Using the labeling convention from class/textbook, let $a=7.5, b=12$, and $A=35^{\circ}$. Find $B$.
2. How many possible triangles satisfy the given conditions?
(a) $a=28, b=15$, and $A=110^{\circ}$
(b) $a=20, c=45$, and $A=125^{\circ}$
(c) $b=25, c=30$, and $B=25^{\circ}$.
3. A satellite orbiting the earth passes directly overhead at observation stations in Phoenix and Los Angeles. At 1:15 am scientists note the satellite is between the two cities and record an angle of elevation of $60^{\circ}$ at Phoenix and $75^{\circ}$ at Los Angeles. Note that Phoenix is 340 miles from Los Angeles.
(a) How far is the satellite from Phoenix at 1:15am?
(b) How far above the ground is it?
4. Every year, the Cedar Falls Chamber of Commerce sponsors a "Chat-a-thon" where couples stand four feet apart and compete to see who can spend the most time talking. There are two ways couples lose -they walk away or they fall asleep standing up. A picture of the situation is shown to the right. Assume the taller person is 6 feet, and the shorter person is 5 feet tall.
How far off the ground are the tops of their heads?

