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) $a = 20, c = 45, \text{ and } A = 125^{\circ}$

(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° at Phoenix and 75° 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?

