1. A surveyor finds that the angle of elevation from eye level, 1.8 meters above the ground, to the top of a cliff is 66°. The surveyor stands 14m from the base of the cliff. Find the height of the cliff to the nearest tenth of a meter

2. A monument is 112.5m high and casts a shadow 201.2m long. Find the angle of elevation of the sun.

3. An observer on the ground finds that the angle of elevation of a balloon is $51°20'$. How high is the balloon if the point directly below it is 237 ft from the observer

4. Cape Hatteras Lighthouse was built in 1870 and rises 208 feet above sea level. From the top of the lighthouse, the lighthouse keeper observes two ships along the same line of sight. The angle of depression to ship 1 is $20°$ and the angle of depression to ship 2 is $12.5°$. For safety purposes, the keeper thinks the two ships should be at least 300 feet apart. If they are less than 300 feet apart, she will sound a warning. How far apart are the vessels? Will she sound the warning?

Find the area of the triangle to the nearest square unit
5. $Q = 67.3°, \ R = 51.2°, \ p = 31.3$
6. $P = 108.4°, Q = 27.3°, r = 19.7$
7. $P = 97.8°, Q = 34.9°, r = 17.3$

Find the length of the altitude from vertex A to side BC for each triangle to the nearest unit.

8. $a = 10, \ b = 12, \ c = 16$
9. $a = 48, b = 26, c = 50$
10. $a = 15, b = 22, c = 18$