

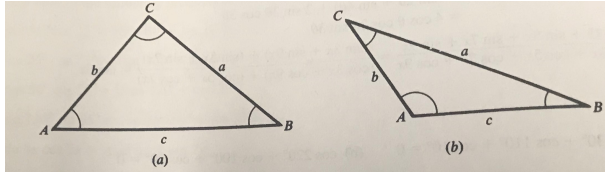
## Additional Problems Assignment 11

1. Find the exact value of the following:

(a)  $2 \cos^2(15^\circ) - 1$

(b)  $2 \sin(15^\circ) \cos(15^\circ)$

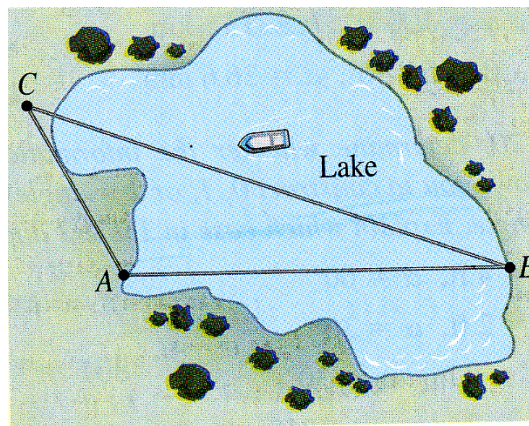
2. Using the notation from below solve the following triangle (that is find the unknown side lengths and unknown angle).



(a)  $b = 50.4, c = 33.3, B = 118^\circ$

(b)  $a = 6.34, b = 7.30, c = 9.98$

3. An underwater telephone cable is to cross a shallow lake from point  $A$  to point  $B$ . Stakes are located at  $A$ ,  $B$  and  $C$ . Distance  $AC$  is measured to be 112m  $\angle CAB$  to be  $118.4^\circ$ , and  $\angle ABC$  to be  $19.2^\circ$ . Find the distance  $AB$ .



4. To estimate the length  $CB$  of the lake in the figure that follows, a surveyor measures  $AB$  and  $AC$  to 89m and 75m, respectively, and  $\angle CAB$  to be  $95^\circ$ . Find the approximate length of the lake.

