

Memorize Laws of Cosine!

$$a^2 = b^2 + c^2 - 2bc(\cos A)$$

$$b^2 = a^2 + c^2 - 2ac(\cos B)$$

$$c^2 = a^2 + b^2 - 2ab(\cos C)$$

For #1 – 3, solve each triangle using the given information. Put your solutions for the **1st triangle** in the **top row** and for the **2nd triangle** (if there is one) use the **bottom row**.

1. $\angle C = 36^\circ$, $\angle B = 83^\circ$, $a = 15$

$$A_1 = \underline{\hspace{2cm}} \quad b_1 = \underline{\hspace{2cm}}$$

$$c_1 = \underline{\hspace{2cm}}$$

$$A_2 = \underline{\hspace{2cm}} \quad b_2 = \underline{\hspace{2cm}}$$

$$c_2 = \underline{\hspace{2cm}}$$

2. $\angle A = 34^\circ$, $b = 11$, $a = 7$

$$B_1 = \underline{\hspace{2cm}} \quad C_1 = \underline{\hspace{2cm}}$$

$$c_1 = \underline{\hspace{2cm}}$$

$$B_2 = \underline{\hspace{2cm}} \quad C_2 = \underline{\hspace{2cm}}$$

$$c_2 = \underline{\hspace{2cm}}$$

3. $a = 24, b = 29, c = 19$

$$A_1 = \underline{\hspace{2cm}} \quad B_1 = \underline{\hspace{2cm}}$$

$$C_1 = \underline{\hspace{2cm}}$$



$$A_2 = \underline{\hspace{2cm}} \quad B_2 = \underline{\hspace{2cm}}$$

$$C_2 = \underline{\hspace{2cm}}$$

4)

Three boats are at sea: Jenny one (J1), Jenny two (J2), and Jenny three (J3). The crew of J1 can see both J2 and J3. The angle between the line of sight to J2 and the line of sight to J3 is 45 degrees. If the distance between J1 and J2 is 2 miles and the distance between J1 and J3 is 4 miles, what is the distance between J2 and J3?