

Chapter 3- Acute Triangle Trigonometry

3.4 Solving Problems Using Acute Triangles: Sine or Cosine Law??

GOAL

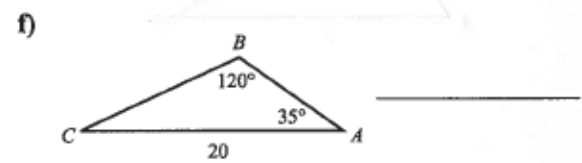
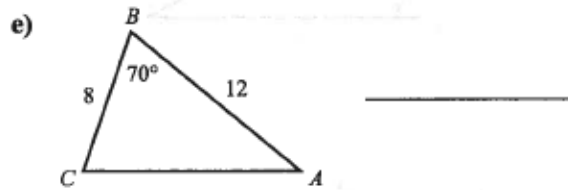
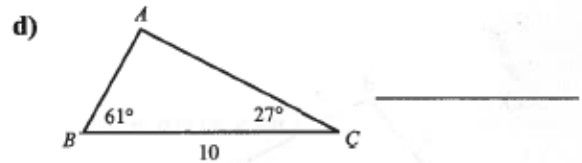
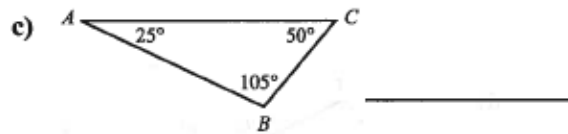
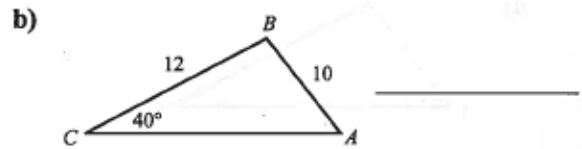
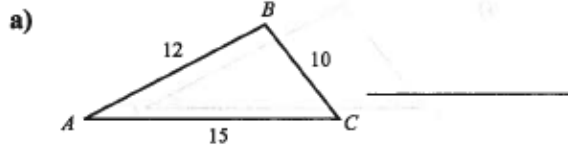
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

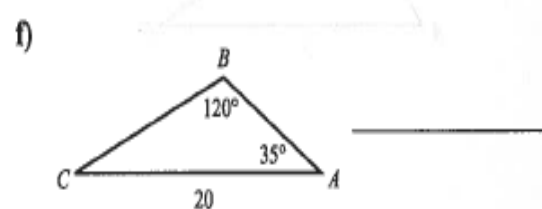
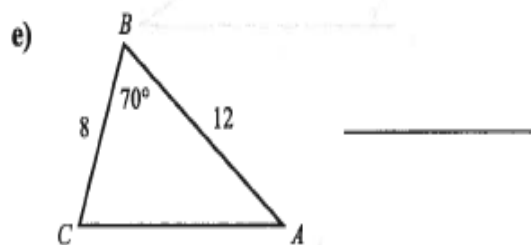
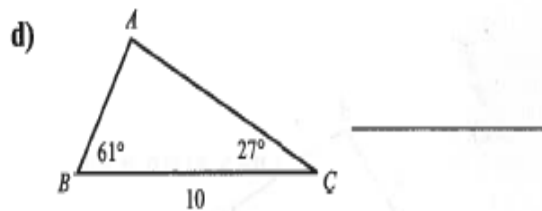
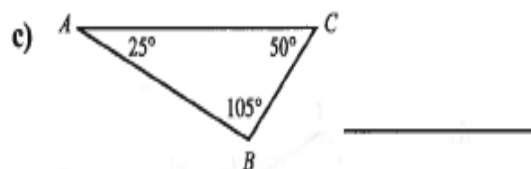
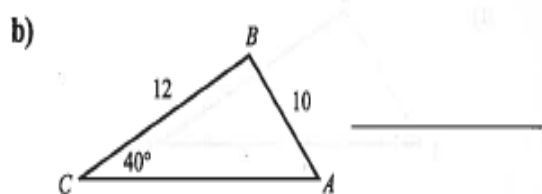
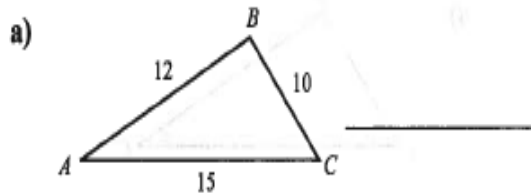
ASA or AAS	SAS
ASS	SSS

Decide on which law to use: SINE or COSINE LAW

Determine whether the Law of Sines or the Law of Cosines would be used to begin the solution process for each triangle.



Determine whether the Law of Sines or the Law of Cosines would be used to begin the solution process for each triangle.



Two security cameras at an expensive jewelry store must be adjusted to monitor an expensive diamond. The cameras are mounted 12 feet above the floor, directly across from each on opposite walls. The walls are 24 feet apart. The diamond is displayed in a case 4 feet high. The distance from the camera on the left to the diamond is 11 feet. Both cameras must be aimed directly at the diamond. What is the angle of depression for both cameras?

The radar screen in the air-traffic control tower at the Edmonton International Airport shows that two airplanes are at the same altitude. According to the range finder, one airplane is 100 km away, in the direction $N60^\circ E$. The other airplane is 160 km away, in the direction $S50^\circ E$.

How far apart are the airplanes, to the nearest tenth of a kilometre?