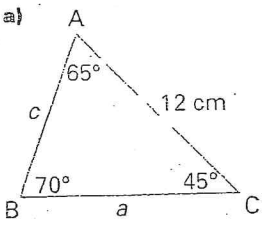
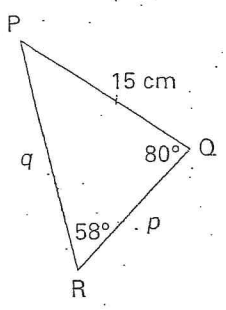
1. Calculate the lengths of the indicated sides in each triangle.

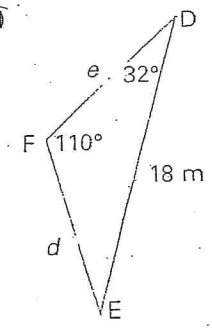
a)



b)

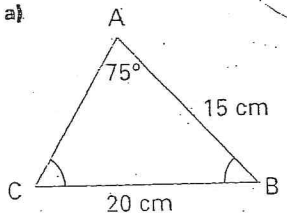


c)

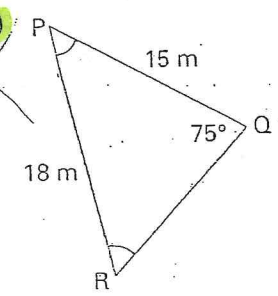


2. Determine the measures of all unknown angles in each triangle, to one decimal place.

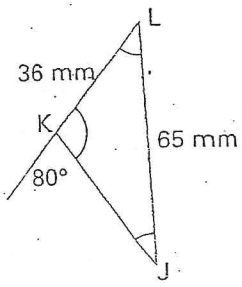
a)



b)



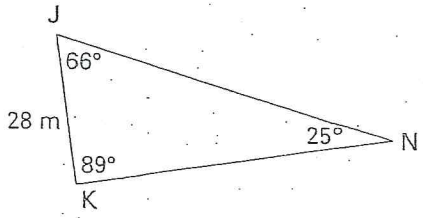
c)



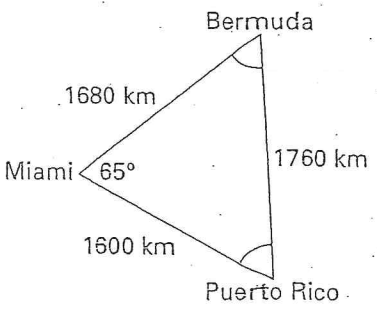
3. Draw each triangle carefully to show the given information. Determine the indicated quantity, to the nearest tenth.
   a) In $\triangle ABC$, $\angle A = 75°$, $\angle B = 42°$, and $a = 12$ cm. Find b.
   b) In $\triangle DEF$, $\angle D = 120°$, $\angle F = 24°$, and $f = 10$ cm. Find e.
   c) In $\triangle GHJ$, $\angle G = 65°$, $g = 8$ cm, and $h = 7$ cm. Find $\angle H$.
   d) In $\triangle KLM$, $\angle K = 64.3°$, $k = 11$ cm, and $l = 9.5$ cm. Find $\angle L$.

APPLY THE CONCEPTS

5. **Concerts** Three laser beams are installed at points J, K, and N, for a lightshow at a concert. The measurement specifications are shown in the diagram.
   a) How far apart are lasers J and N, to the nearest metre?
   b) How far apart are lasers K and N, to the nearest metre?



6. **Cartography** Cartographers use trigonometry to create maps. Calculate the angle measurements for the Bermuda Triangle, to the nearest degree.



7. **Thinking/Inquiry/Problem Solving** A roof-top solar panel needs to be inclined at an angle between 25° and 30° to the horizontal. Are the measurements shown for the rafters and crossbeams appropriate? Explain.