The Cosine Law

Recall: The cosine law is used for non-right angle triangles.

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

2 Classic Cases: a) all 3 sides given

                              b) 2 sides and a contained angle (pacman)

Example 1 Determine the unknown value for each of the following.
a) In ΔPQR, p = 8 cm, q = 7 cm and r = 10 cm, determine $\angle Q$.
b) In ΔGHJ, g = 5.1 m, j = 8 m and $\angle H = 60°$, determine h.

Example 2 Two sides of a parallelogram measure 8cm and 10cm. The longer diagonal measures 15.5cm.
 a) Determine the angles of the parallelogram.
 b) Determine the length of the shorter diagonal.