Indicate which strategy you need to use to solve the problem. If it is a trig, indicate Sin, Cos, Tan, Inverse Sin, Inverse Cos, or Inverse Tan. If you need more than one strategy to use, indicate both.

(a) Geometric Mean (Ski Slope)
(b) Special Right Triangles
(c) Pythagorean Theorem
(d) Converse of Pythagorean Theorem
(e) Sin
(f) Cos
(g) Tan
(h) Inverse Sin
(i) Inverse Cos
(j) Inverse Tan

(1) A scalene triangle with an altitude drawn to the longest side. Measures of two angles are 35 and 40, and the length of the shortest side is 8. You have to find the lengths of the altitude.
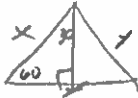
Sin

(2) A right triangle with an altitude drawn to the hypotenuse. Three sides of the right triangles are known. Find the length of the altitude.
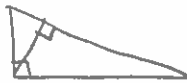
Geom. Mean

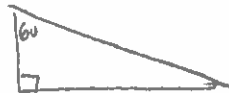(3) Find the length of an altitude of an equilateral triangle with a side length X.

Sp. rt. △

(4) Find the altitude of a trapezoid when the length of the bases and the length of the slant side are known.

isosc.

Pyth. Th.

(5) Find the lengths of two sides of a right triangle when the length of the third side is given and one of the angle is 60.
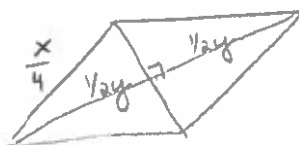
Sp. Rt. △

(6) In a obtuse triangle, the side lengths are 8, X and 13 (in the order of the lengths of the sides). Find the possible range of value for X.
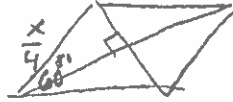
Conv. Pyth. Th.

(7) Perimeter of a rhombus is X. The length of the long diagonal is Y. Express the length of the short diagonal in terms of X and Y.
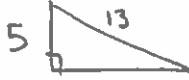
Pyth. Th.

(8) Perimeter of a rhombus is X. The measure of one of the angles is 60. Express the length of short and long diagonals in terms of X.

So. Rt. △

(9) Find the three angles of a right triangle whose sides are 5, 12, and 13.

5   13

Trig $\frac{\sin^{-1}}{\cos}$ or $\tan^{-1}$

(10)   The consecutive vertices of a regular 20-gon is ABC. Find the length of AC.

A   B   C

Trig - $\tan^{-1}$ (need side length)

(11)   In a right triangle, you have to find the measure of an angle, and you were given the lengths of the hypotenuse and the adjacent leg.

ℓ   h

Trig - $\cos^{-1}$ or $\sin^{-1}$