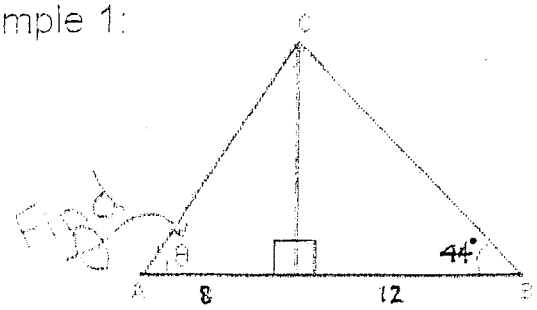
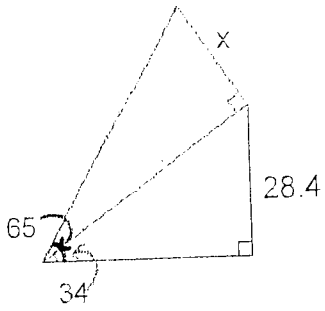
More Solving Right Triangles : Day 2

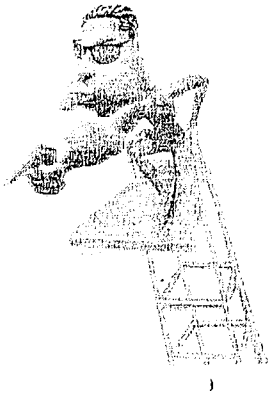
Example 1:



Example 2:

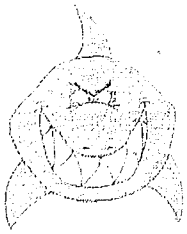


Example 3:



"Fantastic Frank" is lifeguarding at the local beach. From the high lifeguard chair on the edge of the water, he spots a shark at an angle of depression of 25°.....or at least it looks like a shark ???

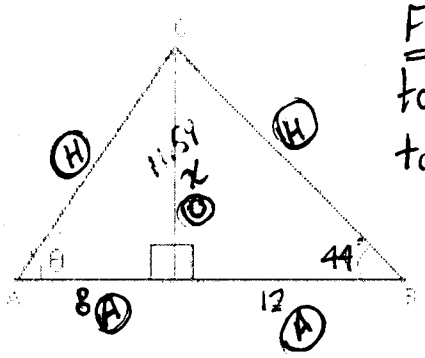
If the lifeguard chair is 5 metres high, how far out is the potentially dangerous and life-threatening fish?



Example 4:

Solve ΔABC, given that $\angle C = 90^\circ$, $\angle A = 56.3^\circ$ and $a = 23.7$ cm.

Example 1:



triangle on the right

Find x

$\tan\theta = \frac{O}{A}$

$\tan 44 = \frac{x}{12}$

$x \doteq 11.59$

triangle on the left

Find θ

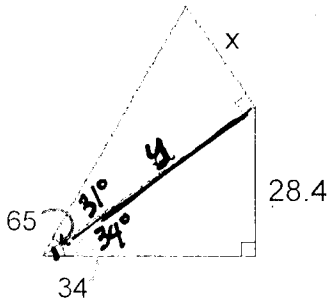
$\tan\theta = \frac{O}{A}$

$\tan\theta = \frac{11.59}{8}$

$\theta = \tan^{-1}\left(\frac{11.59}{8}\right)$

$\theta \doteq 55.38°$

Example 2:



Find side y

$\sin\theta = \frac{O}{H}$

$\sin 34 = \frac{28.4}{y}$

$y = \frac{28.4}{\sin 34}$

$y \doteq 50.79$

Find side x

$\tan\theta = \frac{O}{A}$

$\tan 31 = \frac{x}{50.79}$

$x \doteq 30.52$

Example 3:

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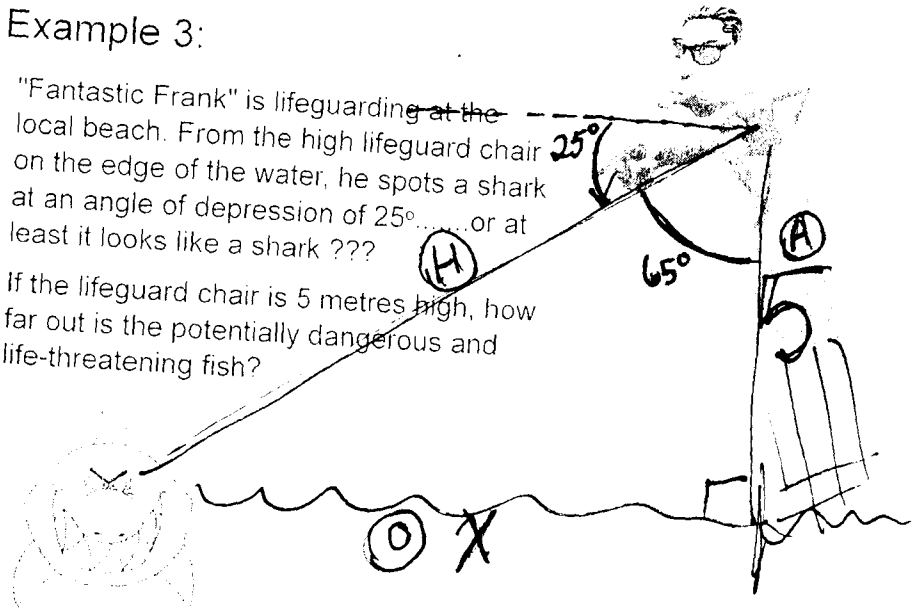
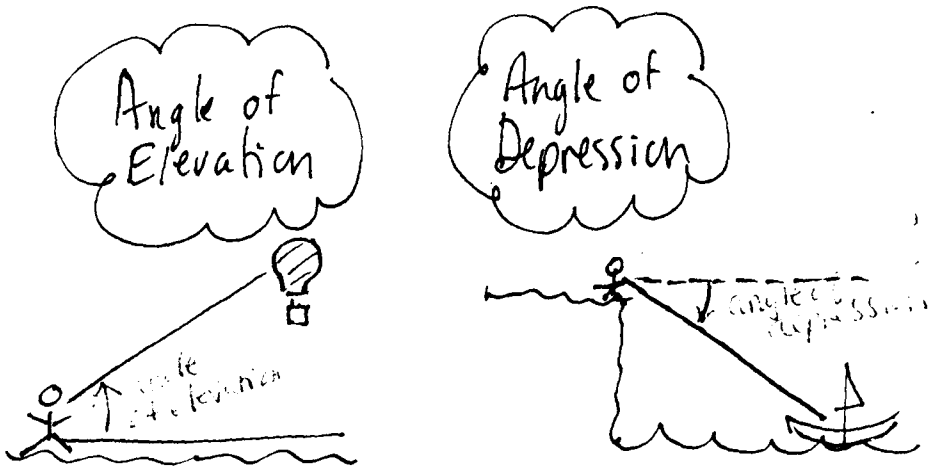


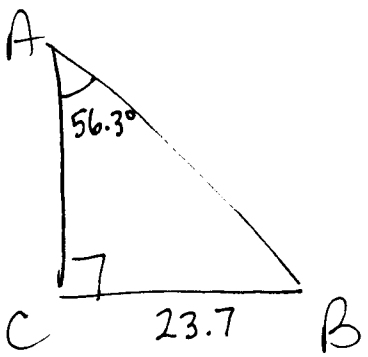
$\tan\theta = \frac{O}{A}$

$\tan 65 = \frac{X}{5}$

$X \doteq 10.72$



Example 4



Find $\angle B$

$\angle B = 180 - 90 - 56.3$

$= 33.7°$

Find side c

$\sin\theta = \frac{opp}{hyp}$

$\sin 56.3 = \frac{23.7}{c}$

$c \doteq 28.49$ cm

Find side b

$\tan\theta = \frac{opp}{adj}$

$\tan 56.3 = \frac{23.7}{b}$

$b \doteq 15.81$ cm