

Algebra II

12-5

Solving Right Triangles

Solve each right triangle. Give lengths to three significant digits and angle measures to the nearest tenth of a degree or 10 minutes. (pg 577)

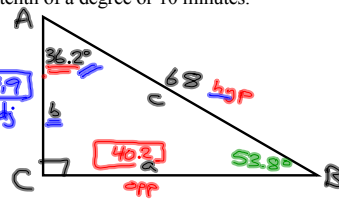
1) $\angle A = 36.2^\circ$
 $c = 68$

$\angle B = 90^\circ - 36.2^\circ$
 $= 53.8^\circ$

$\sin A = \frac{\text{opp}}{\text{hyp}}$

$\sin 36.2^\circ = \frac{a}{68}$

$68 \sin 36.2^\circ = a$
 $40.2 = a$



$\cos A = \frac{\text{adj}}{\text{hyp}}$ $\cos 36.2^\circ = \frac{b}{68}$

$68 \cos 36.2^\circ = b$
 $54.9 = b$

Solve each right triangle. Give lengths to three significant digits and angle measures to the nearest tenth of a degree or 10 minutes.

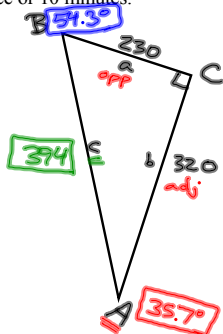
7) $a = 230$
 $b = 320$

$a^2 + b^2 = c^2$
 $230^2 + 320^2 = c^2$
 $155300 = c^2$
 $394.08 = c$

$\tan A = \frac{230}{320}$

$A = \tan^{-1}\left(\frac{230}{320}\right)$
 $A = 35.7^\circ$

$m\angle B = 90^\circ - 35.7^\circ$
 $= 54.3^\circ$



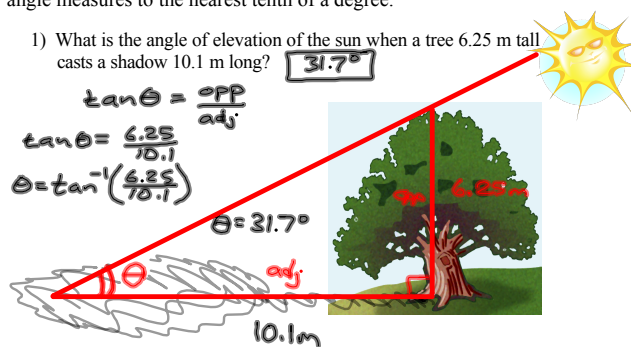
Solve. Give lengths to three significant digits and angle measures to the nearest tenth of a degree. (pg 578)

1) What is the angle of elevation of the sun when a tree 6.25 m tall casts a shadow 10.1 m long? 31.7°

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

$\tan \theta = \frac{6.25}{10.1}$
 $\theta = \tan^{-1}\left(\frac{6.25}{10.1}\right)$

$\theta = 31.7^\circ$



Pg 577
 2-18 even
 Pg 578
 2-10 all