HOMEWORK...

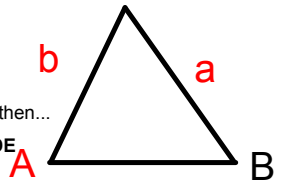
Worksheet - Ambiguous Case.pdf

Do questions #1, 2 & 4

MEMORIZE!!!

Criteria for the Ambiguous Case...

- Must be given SSA
- Given angle is acute
- a < b



*** If ALL 3 criteria are met, then...

CALCULATE THE ALTITUDE

alt = b sin A

CASE 1: a < altitude; there is NO SOLUTION

CASE 2: a = altitude; there is ONE SOLUTION [Right Triangle]

CASE 3: a >altitude; this is the 'AMBIGUOUS CASE'...TWO SOLUTIONS

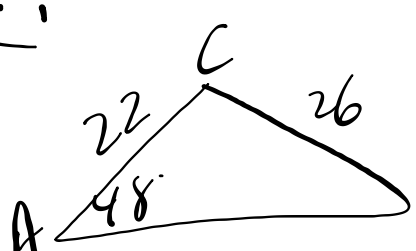
1) Acute Triangle (angle, θ, is found with Law of Sines)
2) Obtuse Triangle (angle is 180° - θ)

Homework ???

16) $\angle A = 48°$

$a = 26$

$b = 22$

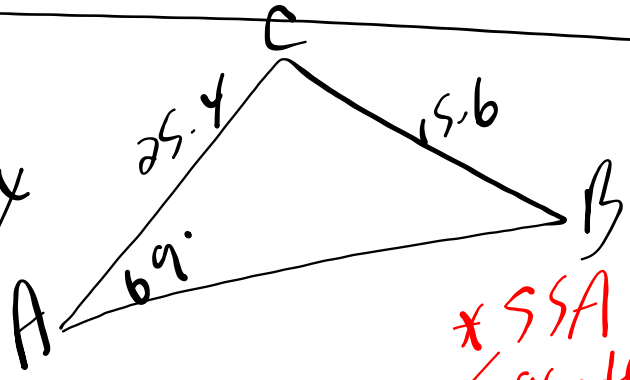


* SSA
✓ - acute
✗ - a < b
1 solution

d) $a = 15.6$

$b = 25.4$

$\angle A = 69°$



* SSA
✓ acute ∠
✓ a < b

$h = b \sin A$

$h = 25.4 \sin 69°$

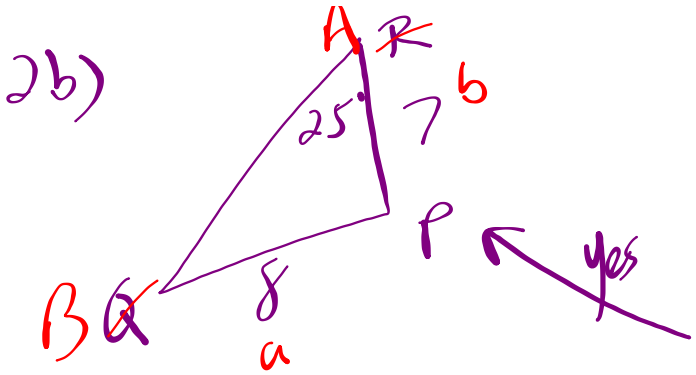
$h = 23.7$

a vs h

15.6 < 23.7

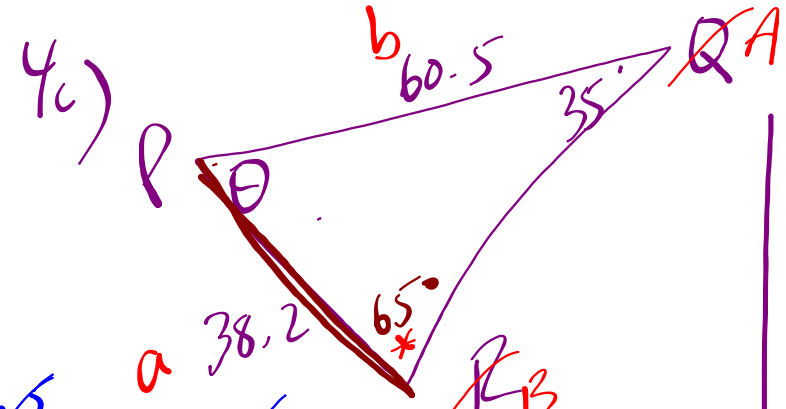
No solution

2b)



✓ ~~*~~ SSA
✓ acute ∠
X a < b
yes
1 solution

4c)



✓ * SSA
✓ acute
✓ a < b.

$h = b \sin A$

$h = 60.5 \sin 35°$

$h = 34.7$

a vs h

38.2 > 34.7

* Ambiguous case 2 solutions

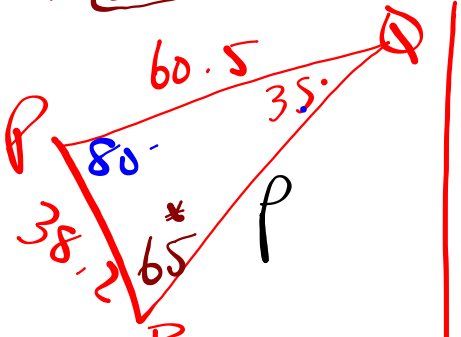
$\frac{\sin R}{60.5} = \frac{\sin 35}{38.2}$

$\sin R = 0.9084$

$\sin^{-1}$

$\angle R = 65°$ OR $\angle R = 115°$

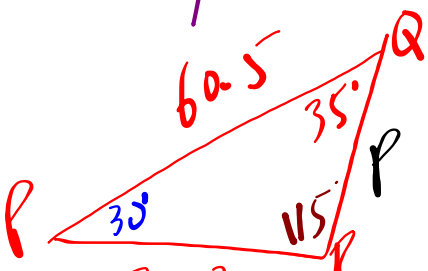
180 − 65



$\angle P = 80°$

$\frac{p}{\sin 80} = \frac{38.2}{\sin 35}$

$p = 65.6$



$\angle P = 30°$

$\frac{p}{\sin 30} = \frac{38.2}{\sin 35}$

$p = 33.3$

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#5

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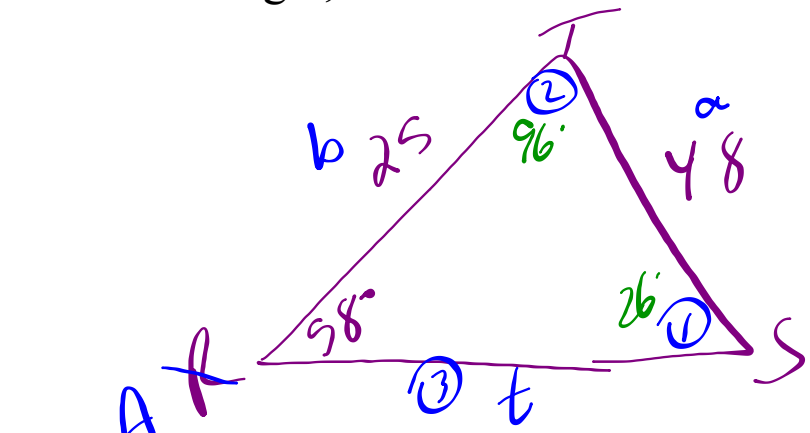
Warm Up

Given ΔRST has angle $R = 58^\circ$, $r = 48$ and $s = 25$.
Solve the triangle, if there is more than one possible, solve both!!



✓SSA
✓acute
X a < b
1 solution

① $\frac{\sin S}{25} = \frac{\sin 58}{48}$

$\sin^{-1}(\sin S) = \sin^{-1}(0.4417)$

$\angle S = 26^\circ$

② $180 - 58 - 26$

$\angle T = 96^\circ$

③ $\frac{t \sin 96}{\sin 96} = \frac{48}{\sin 58}$

$t = 56.3$

Attachments

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