

BE-Geometry I

Monday 1-9-12

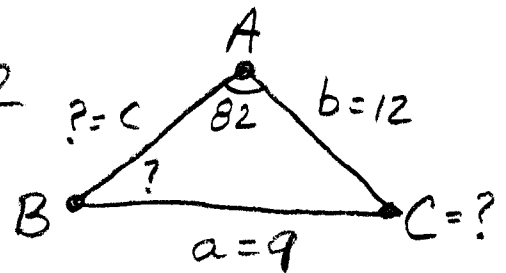
- ① How many $\triangle$'s are possible if you know:
- Ⓐ AAA
 - Ⓑ SSA.
- ② Which of these two cases can be solved and how would you do it?
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- Homework review

Practice for Q3OBQ1

Homework Review - Solve Δ 's

① $A = 82^\circ$ $a = 9$ $b = 12$ $? = c$



$$9^2 = 12^2 + c^2 - 2 \cdot 12 \cdot c \cdot \cos 82^\circ$$

$$81 = 144 + c^2 - 24c(-.1392)$$

$$0 = 63 + c^2 - 3.3408c$$

$$c^2 - 3.3408c + 63 = 0$$

$$a = 1$$

$$b^2 - 4ac$$

$$b = -3.3408$$

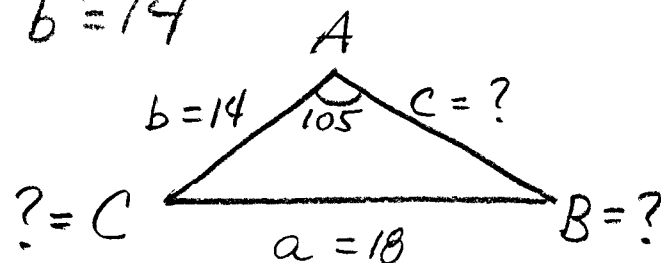
$$(-3.3408)^2 - 4(1)(63)$$

$$c = 63$$

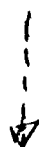
$$11.16 - 252 = -240.84 = d$$

$\therefore$ NO REAL SOLUTION

② $A = 105^\circ$, $a = 18$, $b = 14$



$$18^2 = 14^2 + c^2 - 2 \cdot 14 \cdot c \cdot \cos 105^\circ$$



* COSINE IS NEGATIVE
REF. $\angle$ IS 75°

$$324 = 196 + c^2 + 28c(.2588)$$

$$0 = -128 + c^2 + 7.2464c$$

$$c^2 + 7.2464c - 128 = 0$$

$$a = 1$$

$$b^2 - 4ac$$

$$b = 7.2464$$

$$(7.2464)^2 - 4(1)(-128)$$

$$c = -128$$

$$52.510 + 512 = 564.51 = d$$

$$c = \frac{-b \pm \sqrt{d}}{2a} = \frac{-7.2464 \pm 23.7594}{2} = \begin{matrix} 8.2565 \\ \text{"} \\ c \end{matrix} \begin{matrix} -15.503 \\ \text{DISCARD} \end{matrix}$$

USE LOS TO FIND NEXT ANGLE, SAY C ONE SOLUTION

$$\frac{\sin C}{8.2565} = \frac{\sin 105}{18} \therefore \sin^{-1} \left[\frac{8.2565 \sin 105}{18} \right] = C$$

$$\sin^{-1} [0.4431] = C$$

$$\therefore B = 180 - (105 + 26) = 49^\circ = B \quad 26^\circ \approx C$$