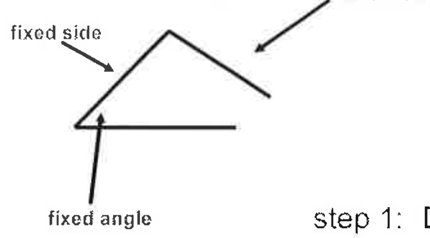
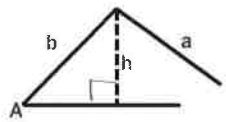
How many triangles?

Can only get 2 Δs in an A.S.S. situation!



step 1: Determine if this is an A.S.S. situation.



step 2: find "ideal" height (h)

$$\sin A = \frac{h}{b}$$

$$so, \quad h = b \sin A$$

step 3: compare *a* to *h* and *b* to see how many triangles you have.

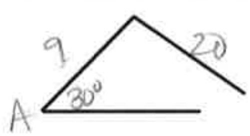
If $a < h$:	No Triangle
If $a = h$ or $a \geq b$:	One Triangle
If $h < a < b$:	Two Triangles

Find the number of triangles. Only do this with acute $\angle$s

1. a = 8, b = 60, A = 9°

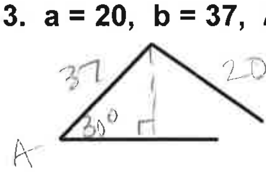
$\sin 9° = \frac{h}{60}$ $h = 60 \sin 9°$ $h = 9.39$ No Δ

2. a = 20, b = 9, A = 30°



$a \geq b$ 1Δ

3. a = 20, b = 37, A = 30°

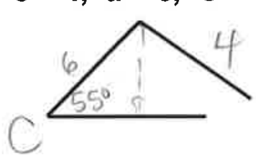


$\sin 30° = \frac{h}{37}$

$h = 37 \sin 30 = 18.5$

2 Δs

4. c = 4, a = 6, C = 55°

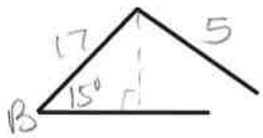


$\sin 55° = \frac{h}{6}$

$h \approx 4.915$

No Δ

5. b = 5, c = 17, B = 15°

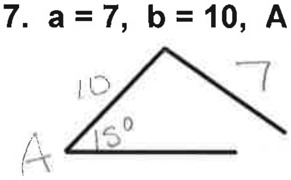


$h = 17\sin 15$
$h \approx 4.3999$ 2 Δs

6. b = 5, c = 17, A = 75°

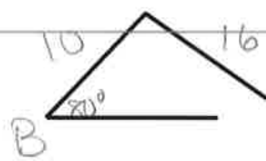
1 Δ not an A.S.S. sit.

7. a = 7, b = 10, A = 15°



$h = 10\sin 15°$
$h \approx 2.588$ 2 Δs

8. b = 16, a = 10, B = 80°



$h = 10\sin 80°$
≈ 9.848 b>a 1 Δ

Other Cases:

How many triangles and why?

9. A = 16°, B = 183°, c=10.1

NO Δ
∠s already add up to more than 180°

10. a = 15, b = 2, c = 20

No Δ
two smallest sides must add up to be greater than third side

11. C=150° , a = 5 , c = 7

1 Δ – 1 obtuse ∠ per Δ + it's across from longest given side

12. B = 135° , b = 10 , a = 12

No Δ.
Only 1 obtuse ∠ per Δ but it's not across from largest side.