PreCalc 4.7 Law of Sines   Name: _MrsA_____
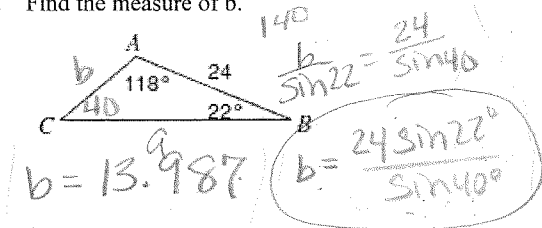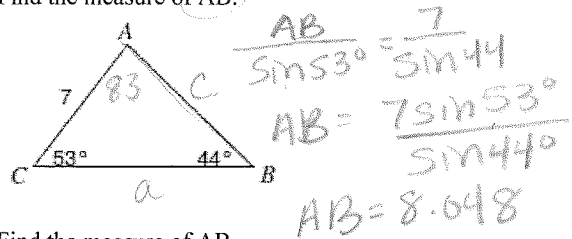
Find each indicated measurement. Give an exact answer before rounding your answers to three decimal places.
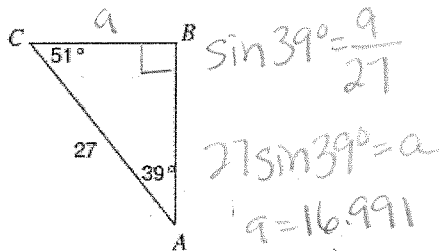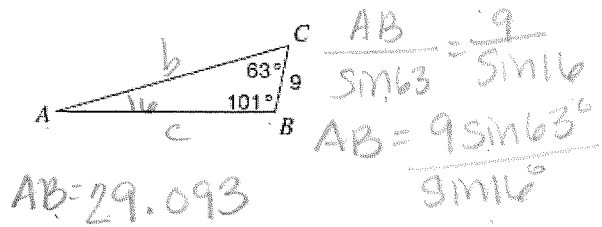
1. Find the measure of b.

$14°$

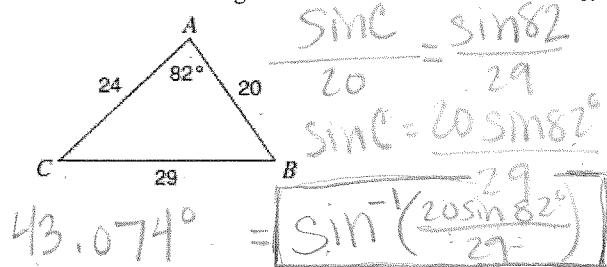$\dfrac{b}{\sin 22} = \dfrac{24}{\sin 40}$

$b = 13.987$ $b = \dfrac{24 \sin 22°}{\sin 40°}$

2. Find the measure of AB.

$\dfrac{AB}{\sin 53°} = \dfrac{7}{\sin 44}$

$AB = \dfrac{7 \sin 53°}{\sin 44°}$

$AB = 8.048$

3. Find the measure of a.

$\sin 39° = \dfrac{a}{27}$

$27 \sin 39° = a$

$a = 16.991$

4. Find the measure of AB.

$\dfrac{AB}{\sin 63} = \dfrac{9}{\sin 16}$

$AB = \dfrac{9 \sin 63°}{9 \sin 16°}$

$AB = 29.093$

5. Find the measure of angle C.

$\dfrac{\sin C}{20} = \dfrac{\sin 82}{29}$

$\sin C = \dfrac{20 \sin 82°}{29}$

$43.074° = \sin^{-1}\left(\dfrac{20 \sin 82°}{29}\right)$

6. Find the measure of angle C.

$\dfrac{\sin C}{19} = \dfrac{\sin 97}{22}$

$\sin C = \dfrac{19 \sin 97}{22}$

$59.004 = \sin^{-1}\left(\dfrac{19 \sin 97}{22}\right)$
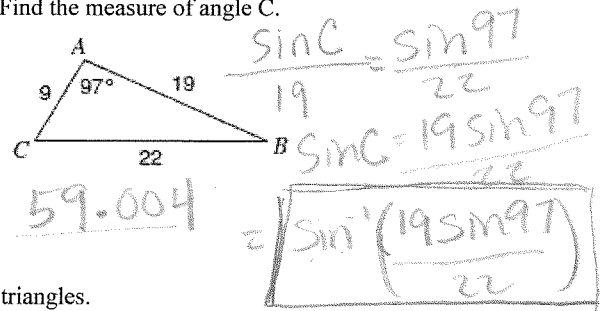
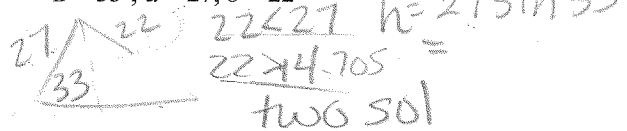State whether the given measurements determine zero, one, or two triangles.
Show work/explain each answer.

7. $C = 63°, b = 9, c = 12$

$9 < 12$

one

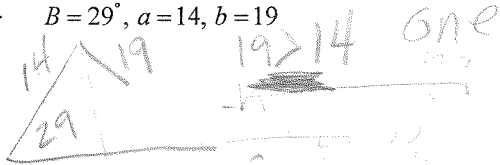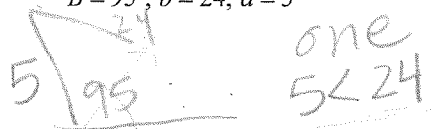8. $B = 33°, a = 27, b = 22$
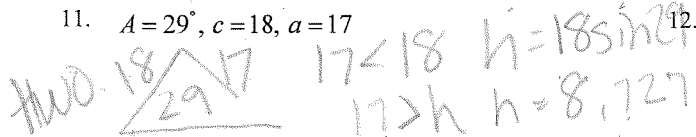
$22 < 27$ $h = 27 \sin 33$

$22 > 14.705$

two sol

9. $B = 29°, a = 14, b = 19$

$19 > 14$ one

10. $B = 95°, b = 24, a = 5$

one

$5 < 24$

11. $A = 29°, c = 18, a = 17$

two $17 < 18$ $h = 18 \sin 29$

$17 > h$ $h = 8.727$

12. $B = 35°, a = 24, b = 6$

$6 < 24$ $h = 24 \sin 35$

$6 < h$ $h = 13.766$