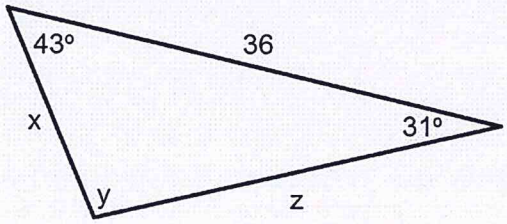
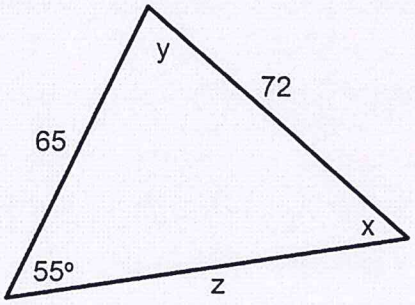
Bellwork Alg 2B Friday, June 1, 2018

Find the missing parts in each triangle. Round to the nearest hundredth.

1.



2.



3. Find all solutions for $0 \leq x \leq 2\pi$. Give EXACT solutions when possible, otherwise, round to the nearest hundredth.

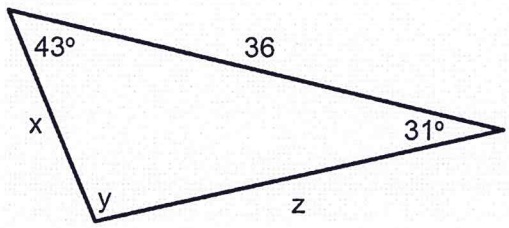
$10\text{Sin}^2 4x - 3\text{Sin}4x = 0$

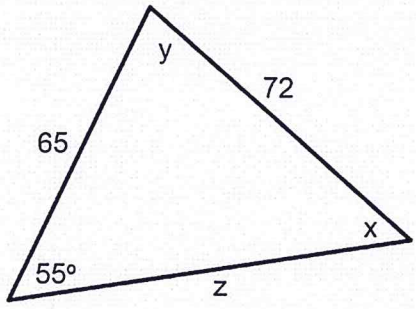
Bellwork Alg 2B Friday, June 1, 2018

Find the missing parts in each triangle. Round to the nearest hundredth.

1.

2.





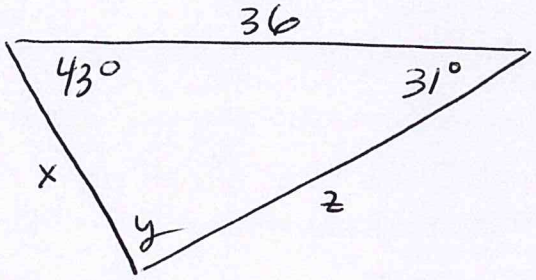
3. Find all solutions for $0 \leq x \leq 2\pi$. Give EXACT solutions when possible, otherwise, round to the nearest hundredth.

$10\text{Sin}^2 4x - 3\text{Sin}4x = 0$

ALG 2B Bellwork Fri 6-1-18

Answers

(1)



1st find $\angle y$: $180 - 43° - 31° = 106°$

You can find either x or z next:

Side x $\quad \frac{\sin 31°}{x} = \frac{\sin 106°}{36}$

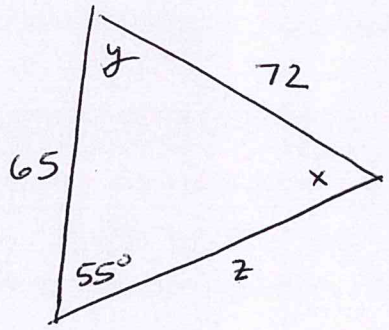
$x = 19.29$

side y $\quad \frac{\sin 43°}{z} = \frac{\sin 106°}{36}$

$z = 25.54$

$x = 19.29$
$y = 106°$
$z = 25.54$

(2)



1st find $\angle x$:

$\frac{\sin 55°}{72} = \frac{\sin x}{65}$

$\sin x = \frac{65 \sin 55°}{72}$

$x = \sin^{-1}\left(\frac{65 \sin 55°}{72}\right)$

$\angle x = 47.69°$

2nd find $\angle y$:

$\angle y = 180° - 55° - 47.69°$

$\angle y = 77.31°$

3rd find side z:

$\frac{\sin 55°}{72} = \frac{\sin 77.31°}{z}$

$z = 85.75$

$x = 47.69°$
$y = 77.31°$
$z = 85.75$

(3) $10\sin^2 4x - 3\sin 4x = 0$

$\sin 4x(10\sin 4x - 3) = 0$

period of $\sin 4x = \frac{2\pi}{4} = \frac{\pi}{2}$

$\sin 4x = 0$

$\frac{4x}{4} = \frac{0}{4}, \frac{\pi}{4}, \frac{2\pi}{4}$

$x = 0, \pi/4, \pi/2$

$\pi/2$	$3\pi/4$	π
π	$5\pi/4$	$3\pi/2$
$\frac{3\pi}{2}$	$7\pi/4$	2π
2π		

$x =$	0	$\pi/4$
	$\frac{\pi}{2}$	$\frac{3\pi}{4}$
	π	
	$\frac{3\pi}{2}$	$\frac{5\pi}{4}$
	2π	$\frac{7\pi}{4}$

$10\sin 4x - 3 = 0$

$\sin 4x = \frac{3}{10}$

$4x = \sin^{-1}\left(\frac{3}{10}\right)$

$\frac{4x}{4} = \frac{0.30}{4}$ & $\frac{\pi - 0.30}{4}$, $\frac{2.84}{4}$

$x =$	.08	& 0.71
	1.65	2.28
	3.22	3.85
	4.79	5.42