Alg 2 Review Sec 13-6,8 and 14-1,4,5 Spring 2019

1. Find the EXACT ratios for the other five trig functions. Simplify fractions and rationalize denominators as necessary.

a) Given $\tan\theta = \frac{40}{9}$ b) Given $\sec\theta = \frac{13}{7}$

2. Find the EXACT value of each using the Unit Circle. Simplify fractions and rationalize denominators as necessary.

a) $\csc\frac{4\pi}{3}$ b) $\cot 210°$ c) $\sec\frac{5\pi}{4}$

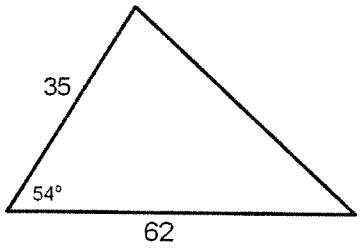
3. Find each to the nearest hundredth.

a) $\cot 78°$ b) $\sec\frac{3\pi}{7}$ c) $\csc(-75°)$

4. Simplify each trig expression.

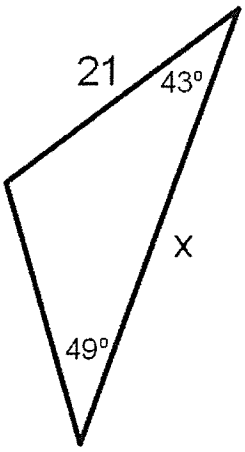
a) $\cos\theta + \sin\theta\tan\theta$ b) $\frac{\cos\theta\csc\theta}{\cot\theta}$ c) $\frac{1+\tan\theta}{\tan\theta} - \cot\theta$ d) $\cos\theta\csc\theta(\sec^2\theta - 1)$

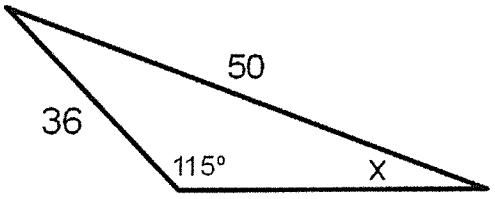
5. Find the area of this triangle to the nearest tenth.



6. Find the measure of x to the nearest tenth.

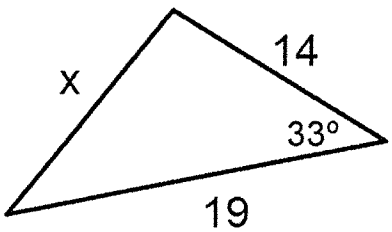
a) b)

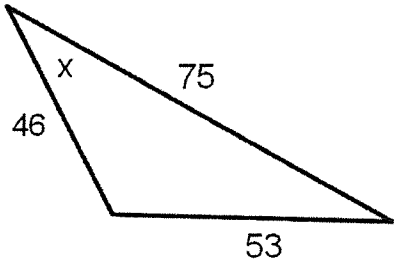




7. Find the measure of x to the nearest tenth.

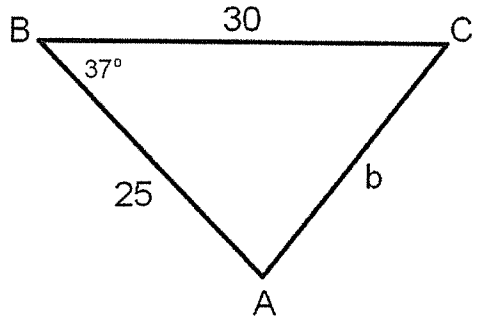
a) b)



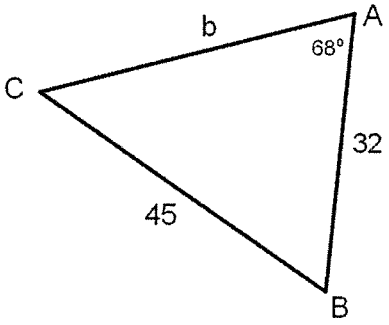


8. Find the measure of the missing sides and angles. Round to the nearest hundredth at each step.

a)



b)

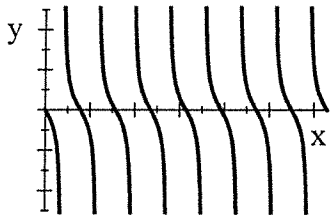


9. For each Tangent function find the period, give 5 Vertical Asymptotes, and give 5 x-intercepts.

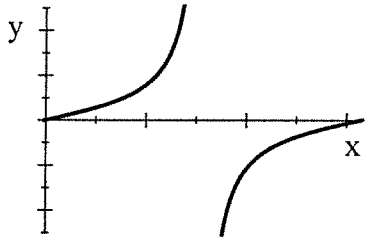
a) $y = -\text{Tan}(5x)$ b) $y = \text{Tan}\left(\frac{2x}{3}\right)$

10. Write the equation for each Tangent Graph.

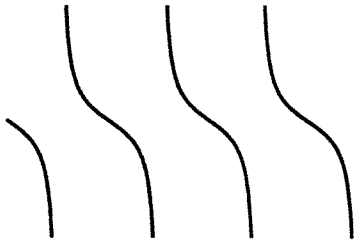
a) Window is from 0 to 6π.



b) Window is from 0 to 4π.



c) Window is from 0 to $\frac{3\pi}{8}$.



Alg 2B Review Sec 13-8, Ch 14 Spring 2018 ANSWERS

1. a) $\text{Cos}\theta = \frac{9}{41}$ $\text{Sin}\theta = \frac{40}{41}$ $\text{Sec}\theta = \frac{41}{9}$ $\text{Csc}\theta = \frac{41}{40}$ $\text{Cot}\theta = \frac{9}{40}$

   b) $\text{Cos}\theta = \frac{7}{13}$ $\text{Sin}\theta = \frac{2\sqrt{30}}{13}$ $\text{Csc}\theta = \frac{13\sqrt{30}}{60}$ $\text{Tan}\theta = \frac{2\sqrt{30}}{7}$ $\text{Cot}\theta = \frac{7\sqrt{30}}{60}$

2. a) $-\frac{2\sqrt{3}}{3}$ b) $\sqrt{3}$ c) $-\sqrt{2}$ 3. a) 0.21 b) 4.49 c) -1.04

4. a) $\sec\theta$ b) 1 c) 1 d) $\tan\theta$

5. 877.3 6. a) $x = 27.8$ b) $x = 40.7°$

7. a) $x = 10.5$ b) $x = 44.4°$

8. a) $b = 18.08$ $\angle A = 86.68°$ $\angle C = 56.32°$

   b) $b = 45.82$ $\angle B = 70.75°$ $\angle C = 41.25°$

9. a) Period= $\frac{\pi}{5}$, x-int: $x = 0, \pm\frac{\pi}{5}, \pm\frac{2\pi}{5}, \pm\frac{3\pi}{5}, \ldots$ VA: $x = \pm\frac{\pi}{10}, \pm\frac{3\pi}{10}, \pm\frac{5\pi}{10}, \pm\frac{7\pi}{10}, \ldots$

   b) Period= $\frac{3\pi}{2}$, x-int: $x = 0, \pm\frac{3\pi}{2}, \pm\frac{6\pi}{2}, \pm\frac{9\pi}{2}, \ldots$ VA: $x = \pm\frac{3\pi}{4}, \pm\frac{9\pi}{4}, \pm\frac{15\pi}{4}, \pm\frac{21\pi}{4}, \ldots$

10. a) $y = -\text{Tan}\frac{4x}{3}$ b) $y = \text{Tan}\frac{x}{4}$ c) $y = -\text{Tan}\frac{28x}{3}$