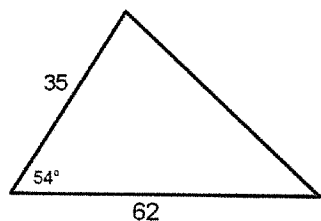


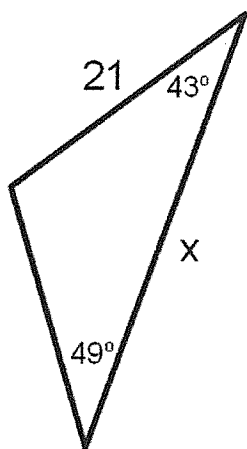
Alg 2B Review Sec 13-8, Ch 14 Spring 2018

- Given $\tan \theta = \frac{40}{9}$ find the other five trig ratios of θ . Simplify fractions and rationalize denominators as necessary.
- Find the exact value of each.
 - $\csc \frac{4\pi}{3}$
 - $\cot 210^\circ$
 - $\sec \frac{5\pi}{4}$
- Find each to the nearest hundredth.
 - $\cot 78^\circ$
 - $\sec \frac{3\pi}{7}$
 - $\csc(-75^\circ)$
- Sketch one period of each. List the coordinates of each relative max and min and list the equations of the vertical asymptotes.
 - $y = \sec 5x$
 - $y = 2\csc(3(x + \frac{\pi}{6})) - 1$
- List 5 x-intercepts and 5 VA for this function: $\cot \frac{4x}{3}$
- Simplify each trig expression.
 - $\cos \theta + \sin \theta \tan \theta$
 - $\frac{\cos \theta \csc \theta}{\cot \theta}$
 - $\frac{1 + \tan \theta}{\tan \theta} - \cot \theta$
 - $\cos \theta \csc \theta (\sec^2 \theta - 1)$
- Verify each trig identity.
 - $\tan x + \cot x = \sec x \csc x$
 - $\frac{1}{\sec \theta \tan \theta} = \csc \theta - \sin \theta$
- Find all EXACT solutions to each trig equation for $0 \leq \theta < 2\pi$
 - $6\cos \theta + 8 = 5$
 - $4\sin^2 \theta = 3$
 - $2\sin^2 \theta - \sin \theta = 0$
 - $2\tan \theta + 5\sqrt{3} = 7\sqrt{3}$
- Find all solutions to each equation to the nearest hundredth for $0 \leq \theta \leq 2\pi$
 - $7\sin \theta + 2 = 6$
 - $4\cos \theta + 3 = 5 - 2\cos \theta$
- Find all solutions to each equation to the nearest hundredth for $0^\circ \leq \theta \leq 360^\circ$
 - $3\tan \theta - 9 = 1$
 - $2 - 8\sin \theta = 5$
- Find the complete solution to this equation. Give Exact answers when possible, otherwise, round to the nearest hundredth. Give answer in radians.
 $\tan^2 4x - \tan 4x = 0$
- Find the complete solution to this equation. Give Exact answers when possible, otherwise, round to the nearest hundredth. Give answer in degrees.
 $5\cos^2 3x + 4\cos 3x = 0$
- Find the area of this triangle to the nearest tenth.

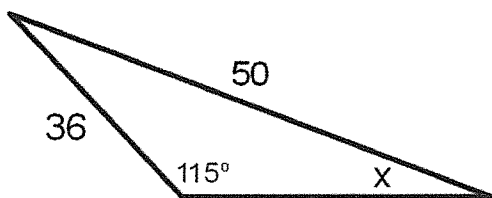


14. Find the measure of x to the nearest tenth.

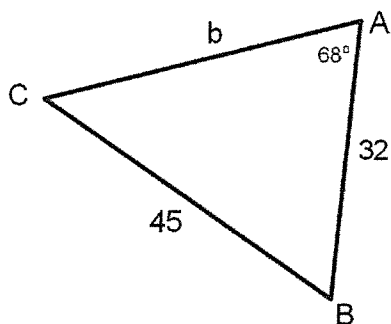
a)



b)

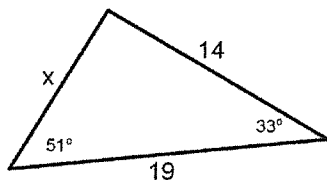


15. Find the measures of the missing sides and angles to the nearest hundredth.

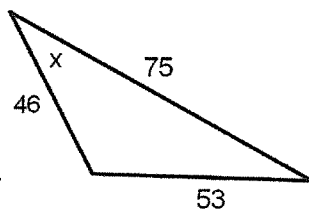


16. Find the measure of x to the nearest tenth.

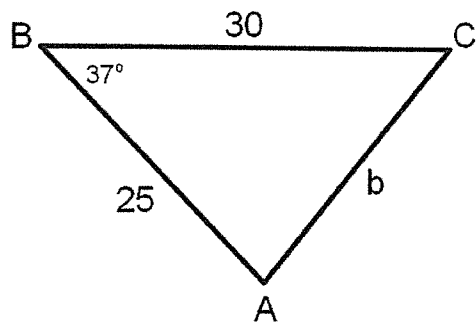
a)



b)



17. Find the measure of the missing sides and angles to the nearest hundredth.

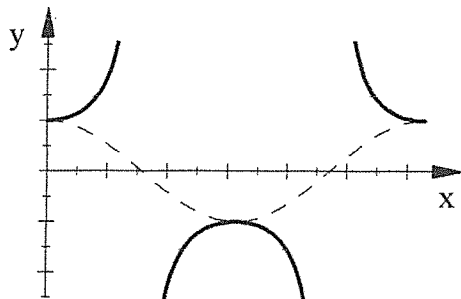


$$1. \cos\theta = \frac{9}{41} \quad \sin\theta = \frac{40}{41} \quad \sec\theta = \frac{41}{9} \quad \csc\theta = \frac{41}{40} \quad \cot\theta = \frac{9}{40}$$

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

$$4. a) y = \sec 5x$$

$$b) y = 2\csc(3(x + \frac{\pi}{6})) - 1$$



Relative Max: $(\frac{\pi}{5}, -1)$

Relative Min: $(0, 1), (\frac{2\pi}{5}, 1)$

$$\text{VA: } x = \frac{\pi}{10}, \frac{3\pi}{10}$$

$$5. \text{ x-int: } x = \pm\frac{3\pi}{8}, \pm\frac{9\pi}{8}, \frac{15\pi}{8}$$

$$\text{VA: } x = 0, \pm\frac{3\pi}{4}, \pm\frac{6\pi}{4}$$

$$6. a) \sec\theta \quad b) 1 \quad c) 1 \quad d) \tan\theta$$

7.

$$8. a) \theta = \frac{2\pi}{3}, \frac{4\pi}{3} \quad b) \theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3} \quad c) \theta = 0, \frac{\pi}{6}, \frac{5\pi}{6}, \pi, 2\pi \quad d) \theta = \frac{\pi}{3}, \frac{4\pi}{3}$$

$$9. a) \theta = 0.61, 2.53 \quad b) \theta = 1.23, 5.05$$

$$10. a) \theta = 73.30^\circ, 253.30^\circ \quad b) \theta = 202.02^\circ, 337.98^\circ$$

$$11. x = 0 + \frac{\pi}{4}n, \frac{\pi}{4} + \frac{\pi}{4}n, \frac{\pi}{2} + \frac{\pi}{4}n, \frac{3\pi}{4} + \frac{\pi}{4}n, \pi + \frac{\pi}{4}n, \frac{5\pi}{4} + \frac{\pi}{4}n, \frac{3\pi}{2} + \frac{\pi}{4}n, \frac{7\pi}{4} + \frac{\pi}{4}n, 2\pi + \frac{\pi}{4}n$$

$$12. x = 30^\circ + 120^\circ n, 90^\circ + 120^\circ n, 47.71^\circ + 120^\circ n, 72.29^\circ + 120^\circ n$$

$$13. 877.3 \quad 14. a) x = 27.8 \quad b) x = 40.7^\circ$$

$$15. b = 45.82 \quad \angle B = 70.75^\circ \quad \angle C = 41.25^\circ$$

$$16. a) x = 9.8 \quad b) x = 44.4^\circ$$

$$17. b = 18.08 \quad \angle A = 86.68^\circ \quad \angle C = 56.32^\circ \quad \text{there may be some variations in the angles depending on rounding.}$$