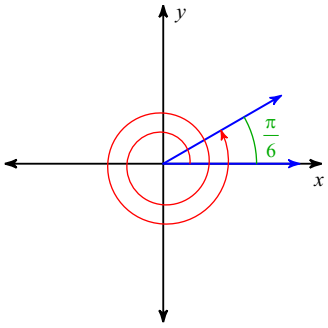
Accel. Precalculus Name_____

Trig Review

Date_____ Period____

Find the measure of each angle.

1)



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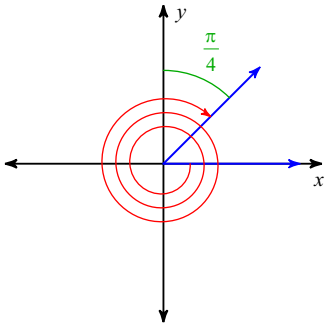

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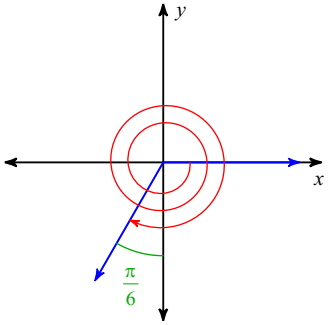

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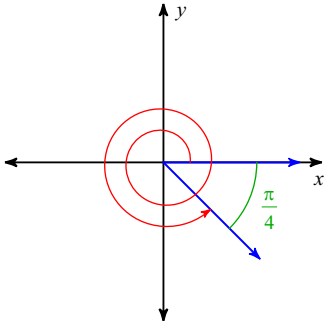


Convert each degree measure into radians and each radian measure into degrees.

5) $-\frac{23\pi}{18}$

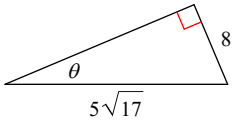
6) -380°

7) 110°

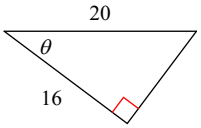
8) $-\frac{40\pi}{9}$

Find the value of the trig function indicated.

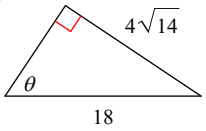
9) sec θ



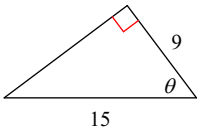
10) csc θ



11) tan θ

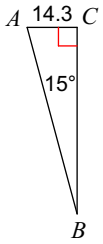


12) csc θ

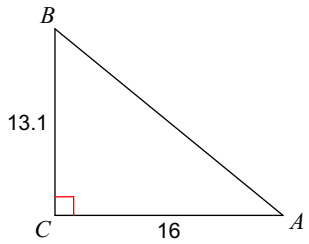


Solve each triangle. Round answers to the nearest tenth.

13)



14)



Find the exact value of each trigonometric function.

15) $\cos -\frac{13\pi}{3}$

16) $\sin \frac{25\pi}{6}$

17) $\tan -\frac{\pi}{4}$

18) $\cos \frac{3\pi}{4}$

19) $\cos -\frac{23\pi}{4}$

20) $\tan 4\pi$

21) $\sin -4\pi$

22) $\cos -\frac{14\pi}{3}$

Find the exact value of each expression.

23) $\sin^{-1} -1$

24) $\tan^{-1} 1$

25) $\cos^{-1} -\frac{1}{2}$

26) $\cos^{-1} \frac{\sqrt{2}}{2}$

27) $\sin^{-1}\left(\csc -\frac{\pi}{2}\right)$

28) $\tan^{-1}(\sin 0)$

29) $\csc \sin^{-1} \frac{\sqrt{3}}{2}$

30) $\sin^{-1}\left(\csc \frac{\pi}{2}\right)$

Use identities to find the value of each expression.

31) Find $\csc \theta$ and $\tan \theta$ if $\sec \theta = \frac{7}{5}$ and $\cot \theta < 0$.

32) Find $\sec \theta$ and $\sin \theta$ if $\csc \theta = -\frac{5}{3}$ and $\cot \theta > 0$.

Verify each identity.

33) $\dfrac{\cot^2 x}{\cot^2 x + 1} = \dfrac{1}{\sec^2 x}$

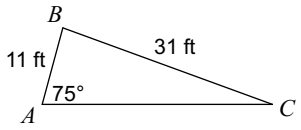
34) $\tan^2 x + \csc^2 x \sin^2 x = \dfrac{1}{\cos^2 x}$

35) $\dfrac{1 + \tan^2 x}{\sin x} = \dfrac{\csc x}{\cos^2 x}$

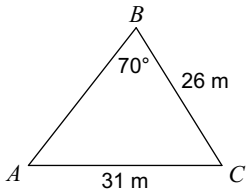
36) $\dfrac{\sec^2 x}{\tan^2 x} = 1 + \cot^2 x$

Use Law of Sines or Law of Cosines to solve each triangle. Round your answers to the nearest tenth.

37)



38)



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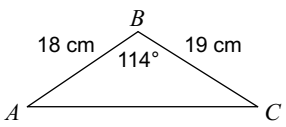

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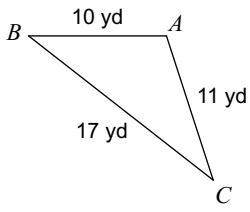

Answers to Trig Review

1) $\frac{25\pi}{6}$

2) $-\frac{23\pi}{4}$

3) $-\frac{14\pi}{3}$

4) $\frac{15\pi}{4}$

5) -230°

6) $-\frac{19\pi}{9}$

7) $\frac{11\pi}{18}$

8) -800°

9) $\frac{5\sqrt{17}}{19}$

10) $\frac{5}{3}$

11) $\frac{2\sqrt{14}}{5}$

12) $\frac{5}{4}$

13) $m\angle A = 75°,\ a = 53.4,\ c = 55.3$

14) $m\angle A = 39.3°,\ m\angle B = 50.7°,\ c = 20.7$

15) $\frac{1}{2}$

16) $\frac{1}{2}$

17) -1

18) $-\frac{\sqrt{2}}{2}$

19) $\frac{\sqrt{2}}{2}$

20) 0

21) 0

22) $-\frac{1}{2}$

23) $-\frac{\pi}{2}$

24) $\frac{\pi}{4}$

25) $\frac{2\pi}{3}$

26) $\frac{\pi}{4}$

27) $-\frac{\pi}{2}$

28) 0

29) $\frac{2\sqrt{3}}{3}$

30) $\frac{\pi}{2}$

31) $-\frac{7\sqrt{6}}{12}$ and $-\frac{2\sqrt{6}}{5}$

32) $-\frac{5}{4}$ and $-\frac{3}{5}$

33) $\frac{\cot^2 x}{\cot^2 x + 1}$ Use $\cot^2 x + 1 = \csc^2 x$

$\frac{\cot^2 x}{\csc^2 x}$ Decompose into sine and cosine

$\frac{\left(\frac{\cos x}{\sin x}\right)^2}{\left(\frac{1}{\sin x}\right)^2}$ Simplify

$\cos^2 x$ Use $\sec x = \frac{1}{\cos x}$

$\frac{1}{\sec^2 x}$ ■

34) $\tan^2 x + \csc^2 x \sin^2 x$ Decompose into sine and cosine

$\left(\frac{\sin x}{\cos x}\right)^2 + \left(\frac{1}{\sin x}\right)^2 \cdot \sin^2 x$ Simplify

$\frac{\cos^2 x + \sin^2 x}{\cos^2 x}$ Use $\sin^2 x + \cos^2 x = 1$

$\frac{1}{\cos^2 x}$ ■

35) $\dfrac{1 + \tan^2 x}{\sin x}$ Use $\tan^2 x + 1 = \sec^2 x$

$\dfrac{\sec^2 x}{\sin x}$ Use $\csc x = \dfrac{1}{\sin x}$

$\csc x \sec^2 x$ Use $\sec x = \dfrac{1}{\cos x}$

$\dfrac{\csc x}{\cos^2 x}$ ■

36) $\dfrac{\sec^2 x}{\tan^2 x}$ Decompose into sine and cosine

$\dfrac{\left(\dfrac{1}{\cos x}\right)^2}{\left(\dfrac{\sin x}{\cos x}\right)^2}$ Simplify

$\dfrac{1}{\sin^2 x}$ Use $\csc x = \dfrac{1}{\sin x}$

$\csc^2 x$ Use $\cot^2 x + 1 = \csc^2 x$

$1 + \cot^2 x$ ■

37) $m\angle B = 85°$, $m\angle C = 20°$, $b = 32$ ft

38) $m\angle C = 58°$, $m\angle A = 52°$, $c = 28$ m

39) $m\angle C = 32°$, $m\angle A = 34°$, $b = 31$ cm

40) $m\angle A = 108°$, $m\angle B = 38°$, $m\angle C = 34°$