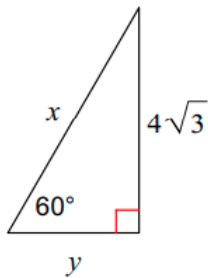


Honors Algebra 2 Trig Test Review Key

****Must show any work necessary to solve problems for credit.**

Solve for the sides of the triangles. Leave answers in the simplest radical form.

1)

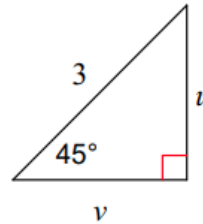


$$4\sqrt{3} = y\sqrt{3} \rightarrow y=4$$

$$x=2*y=2*4=8$$

$$\mathbf{x=8 \quad y=4}$$

2)



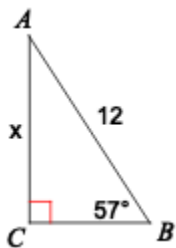
$$3 = u\sqrt{2} \rightarrow u = \frac{3}{\sqrt{2}}$$

$$v=u$$

$$\mathbf{u=v=\frac{3}{\sqrt{2}}}$$

Solve for the value of x. Round answers to the nearest tenth.

3)



$$x=\text{opp}, 12=\text{hyp} \rightarrow \text{SOH}$$

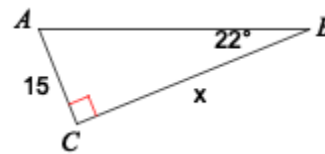
$$\sin 57 = x/12$$

$$*12 \quad *12$$

$$12\sin 57 = x$$

$$\mathbf{x=10.1}$$

4)



$$x=\text{adj}, 15=\text{opp} \rightarrow \text{TOA}$$

$$\tan 22 = 15/x$$

$$*x \quad *x$$

$$x \tan 22 = 15$$

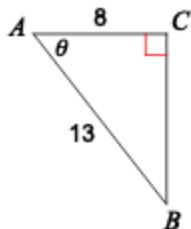
$$\div \tan 22 \quad \div \tan 22$$

$$x = 15 / (\tan 22)$$

$$\mathbf{x=37.1}$$

Solve for the value of θ . Round answers to the nearest tenth, if necessary.

5)



$$13=\text{hyp}, 8=\text{adj} \rightarrow \text{CAH}$$

$$\cos \theta = 8/13$$

$$\cos^{-1}(\cos \theta) = \cos^{-1}(8/13)$$

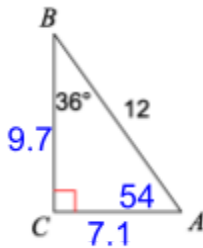
$$\theta = \cos^{-1}(8/13)$$

$$\mathbf{\theta=52}$$

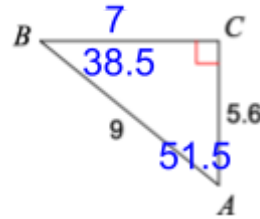
Solve the triangles. Round answers to the nearest tenth, if necessary.

Answers don't necessarily have to be found in this way, but the final answer should match.

6)



7)



$$90+36+m\angle A=180$$

$$m\angle A=180-90-36=54$$

$$\sin 36=AC/12 \rightarrow AC=12\sin 36=7.1$$

$$\cos(\angle A)=5.6/9 \rightarrow \angle A=\cos^{-1}(5.6/9)=51.5$$

$$\cos 36=BC/12 \rightarrow BC=12\cos 36=9.7$$

$$\sin(\angle B)=5.6/9 \rightarrow \angle B=\sin^{-1}(5.6/9)=38.5$$

$$BC^2+5.6^2=9^2 \rightarrow BC^2+31.36=81$$

$$BC^2=49.64 \rightarrow BC=7.0$$

Find a positive and negative coterminal angle for each given angle.

8) 150°

$$150+360=510$$

$$150-360=-210$$

510, -210

9) -600°

$$-600+360+260=120$$

$$-600+360=-240$$

-240, 120

10) $-\frac{28\pi}{9}$

$$\frac{-28\pi}{9} + 2\pi = \frac{-28\pi}{9} + \frac{18\pi}{9} = -\frac{10\pi}{9}$$

$$\frac{-10\pi}{9} + 2\pi = \frac{-10\pi}{9} + \frac{18\pi}{9} = \frac{8\pi}{9}$$

$\frac{-10\pi}{9}, \frac{8\pi}{9}$

11) $\frac{11\pi}{6}$

$$\frac{11\pi}{6} + 2\pi = \frac{11\pi}{6} + \frac{12\pi}{6} = \frac{23\pi}{6}$$

$$\frac{11\pi}{6} - 2\pi = \frac{11\pi}{6} - \frac{12\pi}{6} = \frac{-1\pi}{6}$$

$\frac{-\pi}{6}, \frac{23\pi}{6}$

Find the complement and supplement for each angle, if possible.

Comp=add to 90° or $\frac{\pi}{4}$, Supp=add to 180° or $\frac{\pi}{2}$

12) 100°

Comp: $100+x=90 \rightarrow$ no solution

$\frac{\pi}{36}$

13) $\frac{2\pi}{9}$

Comp: $\frac{2\pi}{9} + x = \frac{\pi}{4} \rightarrow \frac{8\pi}{36} + x = \frac{9\pi}{36} \rightarrow x =$

Supp: $100+x=180 \rightarrow x=80$

Supp: $\frac{2\pi}{9} + x = \frac{\pi}{2} \rightarrow \frac{4\pi}{18} + x = \frac{9\pi}{18} \rightarrow x =$

$\frac{5\pi}{18}$

No comp, 80

$\frac{\pi}{36}, \frac{5\pi}{18}$

Change from degrees to radians. Write your answer as a simplified fraction.

14) 21°

15) -64°

16) 745°

$21 * \frac{\pi}{180} = \frac{21\pi}{180} = \frac{7\pi}{60}$ $-64 * \frac{\pi}{180} = \frac{-64\pi}{180} = \frac{-16\pi}{45}$

$745 * \frac{\pi}{180} = \frac{745\pi}{180} = \frac{149\pi}{36}$

$\frac{7\pi}{60}$

$-\frac{16\pi}{45}$

$\frac{149\pi}{36}$

Change from radians to degrees.

17) $-\frac{31\pi}{6}$

18) $\frac{13\pi}{9}$

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

$\frac{-31\pi}{6} * \frac{180}{\pi} = \frac{-5580}{6} = -930$ $\frac{13\pi}{9} * \frac{180}{\pi} = \frac{2340}{9} = 260$

$\frac{23\pi}{4} * \frac{180}{\pi} = \frac{4140}{4} = 1035$

-930

260

1035

Draw the angle.

The graphs were created in google drawing. If you double click on them, they will open up and you can draw directly on them. If you prefer not to do that, you may do them on paper and send me a picture of them.

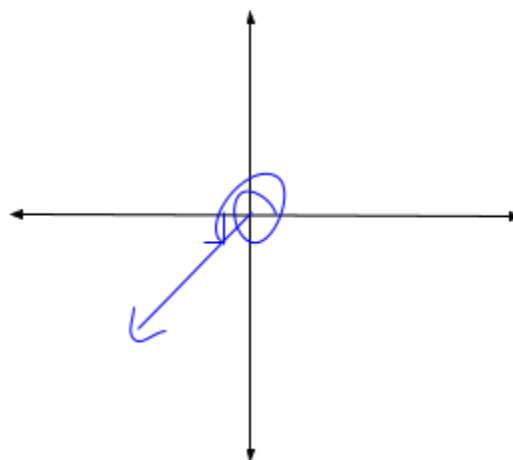
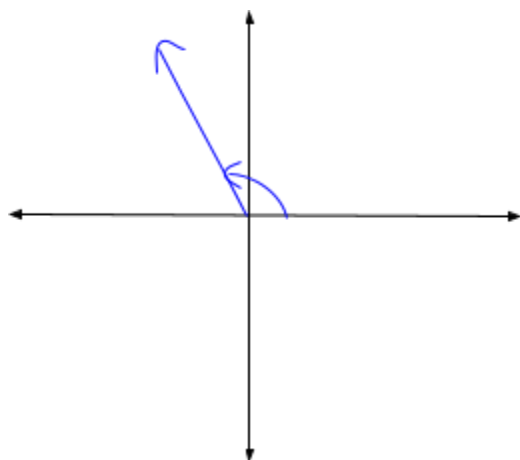
Positive = counter-clockwise, Negative = clockwise

20) 120°

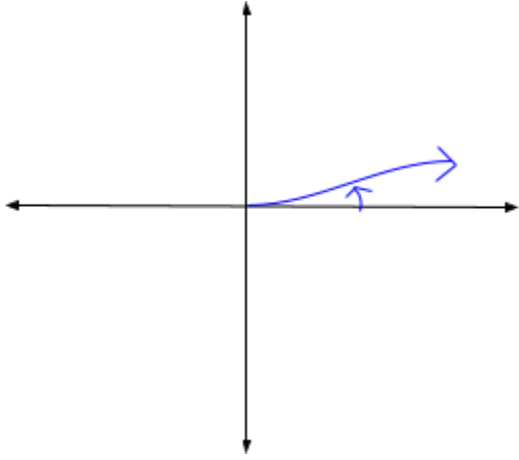
$90+30$ or $180-60$

21) 585°

$360+225=360+180+45$



22) $\frac{\pi}{6}$



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

