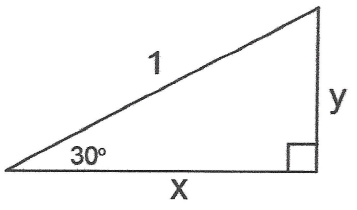
Practice #11 Alg 2 Radians, Coterminal Angles, Special Rt $\triangle's$ Monday, March 30, 2020

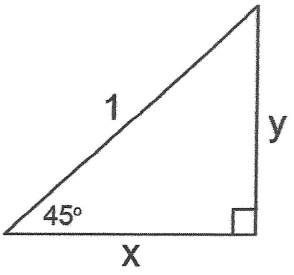
1. Find the EXACT value of x and y in each special right triangle.

a)



$x =$ $y =$

b)



$x =$ $y =$

2. Convert to degrees. Round to the nearest hundredth.

$\theta = \frac{23\pi}{12}$

3. Convert to radians. Leave answer as a reduced fraction in terms of π.

$\theta = 220°$

4. For the given angles state both a positive and a negative coterminal angle. Give your answer in the same units as the original angle.

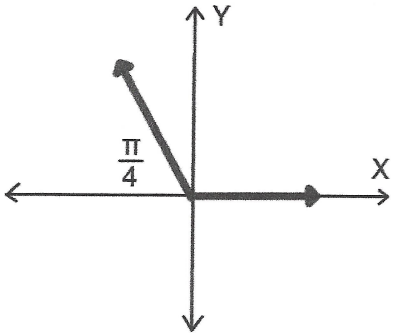
a) $\theta = -1900°$

POS: NEG:

b) $\theta = \frac{29\pi}{6}$

POS: NEG:

5. Use the given reference angle to state both a pos and neg measure, in radians, for this angle, in Standard Position.



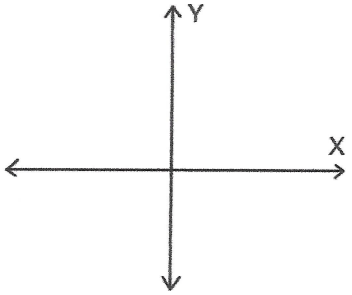
6. Find an angle such that $0° \leq \theta \leq 360°$ or $0 \leq \theta \leq 2\pi$, that is coterminal to the given angle. Give your answer in the same units as the original angle.

a) $\theta = 2360°$

b) $\theta = \frac{-38\pi}{5}$

7. State the reference angle, in radians, for the given angle θ, in Standard Position.

$\theta = \frac{7\pi}{6}$

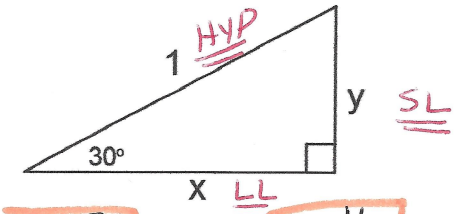


Practice #11 Alg 2 Radians, Coterminal Angles, Special Rt $\triangle$'s Monday, March 30, 2020

1. Find the EXACT value of x and y in each special right triangle.

ANSWERS

a)



$x = \frac{\sqrt{3}}{2}$ $y = \frac{1}{2}$

$LL = SL \cdot \sqrt{3}$

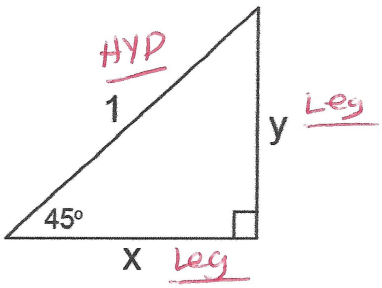
$= \frac{1}{2} \cdot \sqrt{3}$

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

$SL = \frac{1}{2} hypT$

$SL = \frac{1}{2}(1) = \frac{1}{2}$

b)



Legs are $\cong$

$x =$ $y =$

$Leg = \frac{HYP}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$x = y = leg = \frac{\sqrt{2}}{2}$

2. Convert to degrees. Round to the nearest hundredth.

$\theta = \frac{23\pi}{12} \cdot \frac{180^\circ}{\pi} = 345^\circ$

3. Convert to radians. Leave answer as a reduced fraction in terms of π.

$\theta = 220^\circ \cdot \frac{\pi}{180^\circ} = \frac{11\pi}{9}$

$\div 20$ $\div 20$

4. For the given angles state both a positive and a negative coterminal angle. Give your answer in the same units as the original angle.

a) $\theta = -1900^\circ$

POS:

-1900°

$+ 1080^\circ$ $\rightarrow 1080 = 3(360)$

-820°

$+ 1080^\circ$

260°

NEG:

$-1900^\circ - 360^\circ$

$= -2260^\circ$

b) $\theta = \frac{29\pi}{6}$

$2\pi = \frac{12\pi}{6}$

POS:

$\frac{29\pi}{6} + \frac{12\pi}{6}$

$= \frac{41\pi}{6}$

NEG:

$\frac{29\pi}{6} - \frac{12\pi}{6}$

$= \frac{17\pi}{6}$

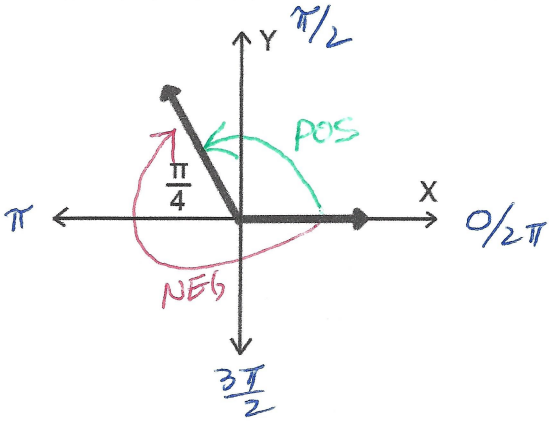
$- \frac{12\pi}{6}$

$= \frac{5\pi}{6}$

$- 12\pi$

There is an infinite # of answers to these,

5. Use the given reference angle to state both a pos and neg measure, in radians, for this angle, in Standard Position.



POS $\quad \pi - \frac{\pi}{4} = \frac{4\pi}{4} - \frac{\pi}{4} = \boxed{\frac{3\pi}{4}}$

NEG $\quad -(\pi + \pi/4) = -\left(\frac{4\pi}{4} + \frac{\pi}{4}\right)$

$= \boxed{-\frac{5\pi}{4}}$

6. Find an angle such that $0° \le \theta \le 360°$ or $0 \le \theta \le 2\pi$, that is coterminal to the given angle. Give your answer in the same units as the original angle.

a) $\theta = 2360°$

$-1080°$

$= 1280°$

$-1080°$

$= \boxed{200°}$

b) $\theta = \frac{-38\pi}{5}$

$2\pi = \frac{10\pi}{5}$

$+\frac{10\pi}{5}$

$-\frac{28\pi}{5}$

$+\frac{10\pi}{5}$

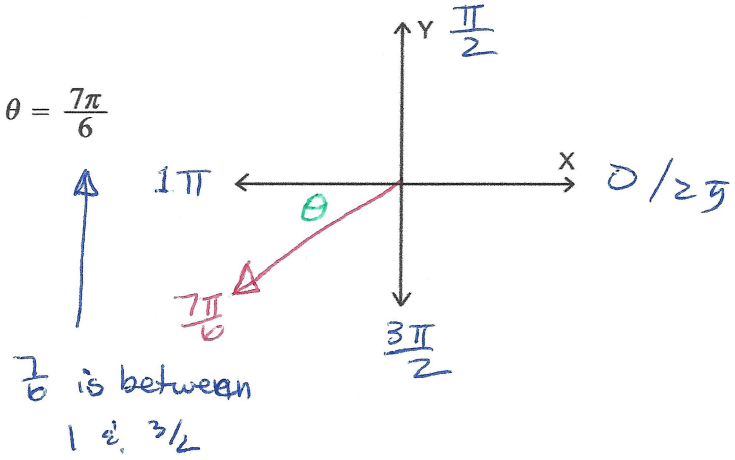
$-\frac{18\pi}{5}$

$+\frac{10\pi}{5}$

$-8\pi/5 + 10\pi/5 = \boxed{\frac{2\pi}{5}}$

7. State the reference angle, in radians, for the given angle θ, in Standard Position.

$\theta = \frac{7\pi}{6}$



$\frac{7}{6}$ is between 1 & $3/2$

Reference $\angle \theta$

$\frac{7\pi}{6} - \pi = \frac{7\pi}{6} - \frac{6\pi}{6}$

$\boxed{\theta = \frac{\pi}{6}}$