Thursday, January 12, 2017
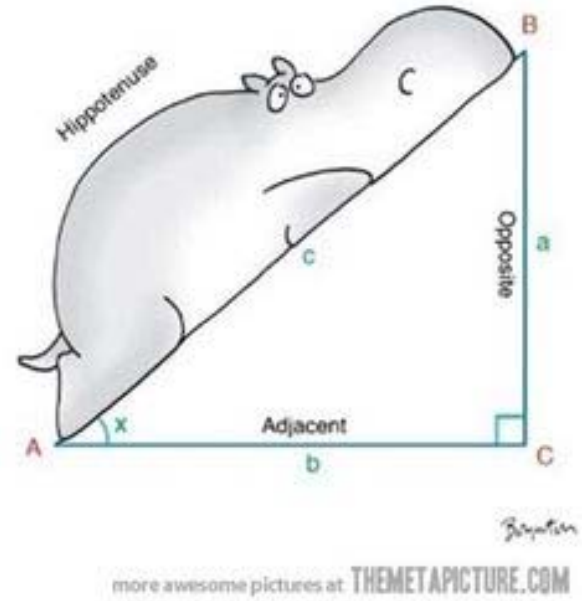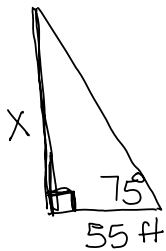
✔ Homework Check
✔ Finish Peardeck & Discuss (and get grades/discuss course selection)
✔ 4.3 - Coterminal Angles & Circular Trig Functions

61)

$$\tan 75° = \frac{x}{55}$$

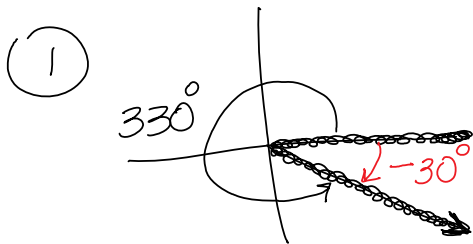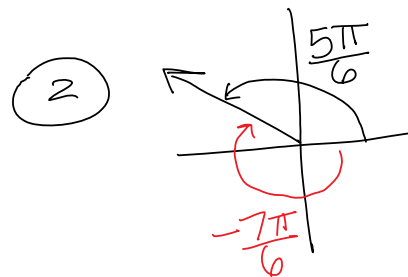$$55 \tan 75° = x$$

$$\boxed{x \approx 205.26 \text{ ft}}$$

4.3 Circular Trig Functions

Coterminal Angles: have the same initial side and same terminal side but different measures

✱ Angles Measured from + x-axis
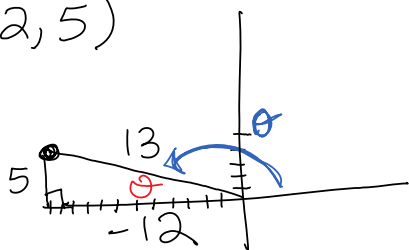+ angles go Counterclockwise
– angles go clockwise

①
330°   −30°

330° and −30° are coterminal angles

②
$\frac{5\pi}{6}$ $\frac{-7\pi}{6}$

$\frac{5\pi}{6}$ and $\frac{-7\pi}{6}$ are coterminal angles

$330° + 360° = 690°$ also coterminal $\frac{5\pi}{6} + \frac{12\pi}{6} = \frac{17\pi}{6}$
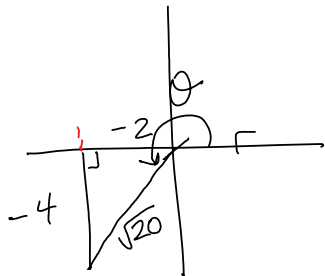
Trig is Not limited to Special ∠s 30, 45, 60, 90, etc!

① Find the 6 trig functions for the angle whose terminal side contains

$(-12, 5)$

$\sin\theta = \frac{5}{13}$ $\csc\theta = \frac{13}{5}$

$\cos\theta = \frac{-12}{13}$ $\sec\theta = \frac{-13}{12}$

$\tan\theta = \frac{5}{-12}$ $\cot\theta = -\frac{12}{5}$

② ... terminal side contains $(-2, -4)$

△ always on X-axis
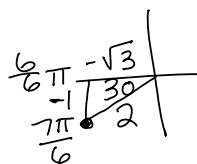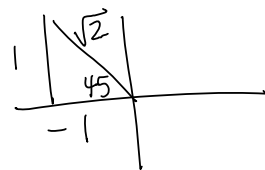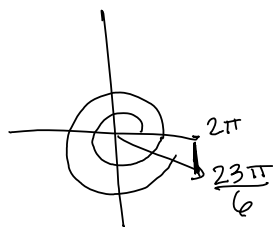
$\sin\theta = \frac{-4}{\sqrt{20}}$ $\csc\theta = \frac{-\sqrt{20}}{4}$

$\cos\theta = \frac{-2}{\sqrt{20}}$ $\sec\theta = \frac{-\sqrt{20}}{2}$

$\tan\theta = \frac{-4}{-2} = 2$ $\cot\theta = \frac{1}{2}$

Evaluate the trig function. (Special ∠s)

① $\sin\frac{\pi}{6} = \frac{1}{2}$ ② $\sin\frac{7\pi}{6} = -\frac{1}{2}$

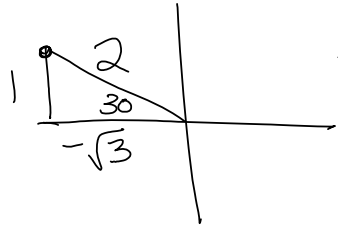$\frac{6}{6}\pi \quad \frac{-\sqrt{3}}{-1} \quad 30 \quad 2$
$\frac{7\pi}{6}$

③ $\sin\frac{23\pi}{6} = -\frac{1}{2}$ ④ $\cos\frac{3\pi}{4} = \frac{-1}{\sqrt{2}}$ or $\frac{-\sqrt{2}}{2}$

2π
$\frac{23\pi}{6}$

$1 \quad \sqrt{2} \quad 45 \quad -1$

⑤ ___ $\frac{5\pi}{}$ ___ 2   ⑥ $\cot\frac{5\pi}{} = -\sqrt{3}$

(5) $\sec \dfrac{5\pi}{6} = -\dfrac{2}{\sqrt{3}}$

$= -\dfrac{2\sqrt{3}}{3}$

(6) $\cot \dfrac{5\pi}{6} = -\sqrt{3}$