Alg. 2 - BE | Monday 1-9-12

Find the exact value:

1. $\cos -30^\circ$
2. $\tan \frac{\pi}{6}$
3. $\sec 120^\circ$
4. $\sin 180^\circ$
5. $\tan -\frac{\pi}{2}$

- Homework review — See next page
- Practice for QBQ1

Homework review: Pg. 713 #27-31, 49, 56, 57

(27) $120\text{deg} \cdot \frac{\pi \text{ rad}}{180\text{deg}} = \boxed{\frac{2\pi}{3}} \approx 2.09$ radians

(28) $60\text{ deg} \cdot \frac{\pi}{180\text{ deg}} = \boxed{\frac{\pi}{3}} \approx 1.05$ radians

(29) $-15\text{ deg} \cdot \frac{\pi}{180\text{deg}} = \boxed{\frac{-\pi}{12}} \approx -0.26$ radians

(30) $-\cancel{225}^{45}\text{ deg} \cdot \frac{\pi}{\cancel{180}^{36}\text{deg}} = \boxed{\frac{-5\pi}{4}} \approx -3.93$ radians

(31) $660\text{ deg} \cdot \frac{\pi}{180\text{deg}} = \boxed{\frac{11\pi}{3}} \approx 11.52$ radians

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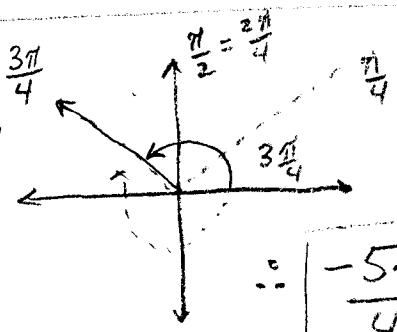
(49) $\frac{3\pi}{4} \Rightarrow$



$\therefore \boxed{\frac{-5\pi}{4} = \text{COTERMINAL}}$

or $2\pi + \frac{3\pi}{4} = \frac{8\pi}{4} + \frac{3\pi}{4} = \boxed{\frac{11\pi}{4} = \text{COTERMINAL}}$

(56) $A_\Delta = \frac{1}{2} r^2 \theta$: θ IN RADIANS

$r = 10$ IN $\qquad \theta = \frac{4\pi}{3}$

$\therefore A_\Delta = \frac{1}{2} \cdot \frac{10^2}{1} \cdot \frac{4\pi}{3}$

$\boxed{A_\Delta = \frac{200\pi}{3} \text{ IN}^2}$ EXACT or $\boxed{A_\Delta \approx 209.4 \text{ IN}^2}$ APPROXIMATE

(57) $A_\Delta = \frac{1}{2} r^2 \theta$

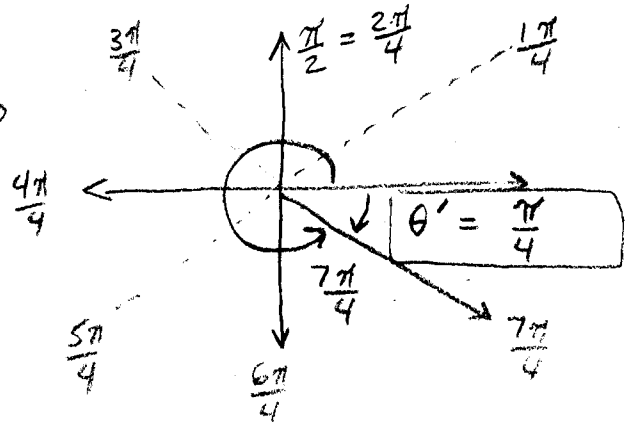
$\theta = 150 \text{ deg} \cdot \frac{\pi}{180} = \frac{5\pi}{6} \qquad r = 12 \text{ m}$

$\therefore A_\Delta = \frac{1}{2} \cdot \frac{12^2}{1} \cdot \frac{5\pi}{6} = 72 \cdot \frac{5\pi}{6}$

$\boxed{A_\Delta = 60\pi \text{ m}^2}$ EXACT or $\boxed{188.5 \text{ m}^2}$ APPROXIMATE

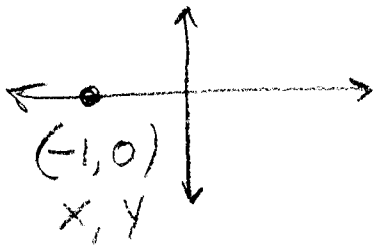
Homework Review Pg. 722 #8, 11-13, 20

(8) $\frac{7\pi}{4} \Rightarrow$



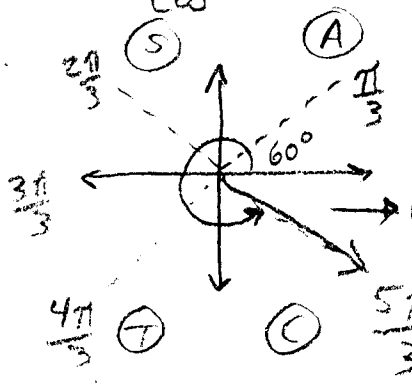
Ref. Angle ALWAYS positive

(11) $\cos 180^\circ \Rightarrow$

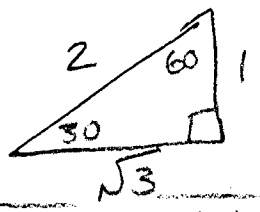


$\cos 180^\circ = -1$

(12) $\tan \frac{5\pi}{3} \Rightarrow$



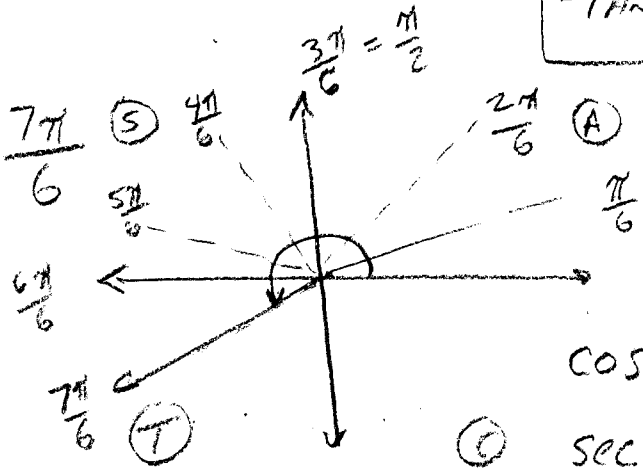
$\theta' = \frac{\pi}{3} = 60^\circ$



$\tan \frac{\pi}{3} = -\sqrt{3}$

↑ QUADRANT IV

(13) $\sec \frac{7\pi}{6}$



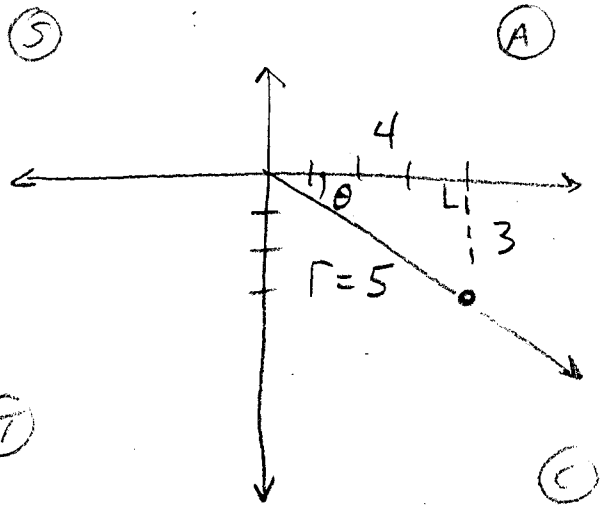
$\therefore \theta' = \frac{\pi}{6} = 30^\circ$

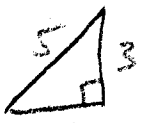
$\cos 30^\circ = \frac{\sqrt{3}}{2} \Rightarrow$

C $\quad \sec 30 \Rightarrow -\frac{2}{\sqrt{3}} = \boxed{-\frac{2\sqrt{3}}{3}}$

Pg. 722

(20) $(4, -3)$





PYTHAGOREAN TRIPLE

$\therefore$

$\sin\theta = -\frac{3}{5}$ $\quad \csc\theta = -\frac{5}{3}$

$\cos\theta = \frac{4}{5}$ $\quad \sec\theta = \frac{5}{4}$

$\tan\theta = -\frac{3}{4}$ $\quad \cot\theta = -\frac{4}{3}$