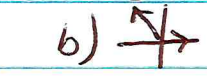
ALG 2: Trig Test Review Answer Key w/ Work

*On 9-12, ∠A is left most, ∠B is right most L→R

① $\frac{78}{1}\cdot\frac{\pi}{180}=\frac{78\pi}{180}=\frac{13\pi}{30}$ ② $\frac{55}{1}\cdot\frac{\pi}{180}=\frac{55\pi}{180}=\frac{11\pi}{36}$

③ $\frac{24\pi}{23}\cdot\frac{180}{\pi}=\frac{4320\pi}{23\pi}\approx 187.83°$ ④ $\frac{67\pi}{47}\cdot\frac{180}{\pi}=\frac{10800\pi}{47\pi}\approx 22.98°$

⑤ a) $780-720=60°$ ⑥ a) $-675+720=45°$ ⑦ a) $\frac{8\pi}{3}-\frac{2\pi}{1}=2\pi/3$

b)  b)  b) 

c) ref ∠ $=60°$ c) ref ∠ $=45°$ c) ref ∠ $=2\pi/6=\pi/3$

⑧ a) $\frac{-17\pi}{6}+\frac{4\pi}{1}=7\pi/6$ ⑨ leg $=6$; hypot $=6\sqrt{2}$ ($\angle A=\angle B=45°$)

b) 

c) ref ∠ $=7\pi/6=\pi/6$ $\sin A=\sin B=\frac{6}{6\sqrt{2}}=\frac{1}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=\frac{\sqrt{2}}{2}=\cos A=\cos B$

$\angle A=30°$, $\angle B=60°$ $\tan A=\frac{6}{6}=1$ $\tan B=\frac{6}{6}=1$

⑩ a) short leg $=2$ (given ⑪ a) short leg $=14/2=7$ $\angle A=30°$ $\angle B=60°$

medium leg $=2\sqrt{3}$ medium leg $=7\sqrt{3}$

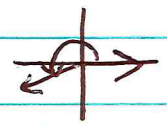
hypot $=2\cdot 2=4$ hypot (given) $=14$

b) $\sin A=\frac{2}{4}=\frac{1}{2}=\cos B$ b) $\sin A=\frac{7}{14}=\frac{1}{2}=\cos B$

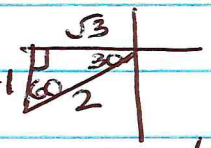
$\cos A=\frac{2\sqrt{3}}{4}=\sqrt{3}/2=\sin B$ $\cos A=\frac{7\sqrt{3}}{14}=\frac{\sqrt{3}}{2}=\sin B$

$\tan A=\frac{2}{2\sqrt{3}}=\frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\sqrt{3}/3$ $\tan A=\frac{7}{7\sqrt{3}}=\frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\sqrt{3}/3$ $\tan B=\frac{7\sqrt{3}}{7}=\sqrt{3}$

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

⑫ a) $\angle A=45°$ $\angle B=45$ ⑬ a) 

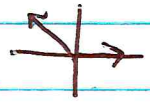
legs $=18/\sqrt{2}\cdot\sqrt{2}/\sqrt{2}=18\sqrt{2}/2=9\sqrt{2}$ b) ref ∠ $=210-180=30°$

hypot $=18$ (given) c) 

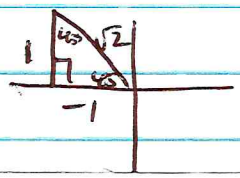
$\sin A=\cos A=\sin B=\cos B=\frac{9\sqrt{2}}{18}=\frac{\sqrt{2}}{2}$ d) $\sin 210°=-1/2$

$\tan A=\tan B=\frac{9\sqrt{2}}{9\sqrt{2}}=1$ $\cos 210°=-\sqrt{3}/2$

$\tan 210°=\frac{-1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{\sqrt{3}}{3}$

⑭ a) 

b) ref ∠ $=180-135=45°$ d) $\sin 135°=\frac{1}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=\sqrt{2}/2$

c) 

$\cos 135°=\frac{-1}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=-\sqrt{2}/2$

$\tan 135°=\frac{1}{-1}=-1$