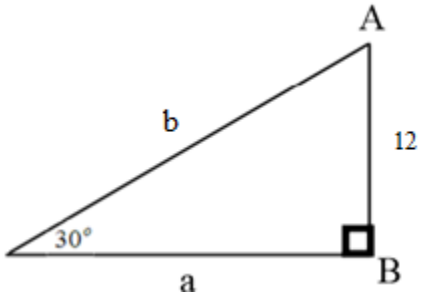
MAT 1420 Week 7 Written Assignment
pts Covers Sections 2.5 and 3.1

2.5 – Multiple Angles and Product-to-Sum Formulas
3.1 – Law of Sines

1. (5 pts) Solve the triangle on the right. I want *exact* solutions. No decimal approximationgs.



2. (5 pts) Find the *exact* value of $\cos\left(\arcsin\left(\frac{5\pi}{3}\right)\right)$.

3. (5 pts) Find *exact* values of $\sin\left(\frac{u}{2}\right)$, $\cos\left(\frac{u}{2}\right)$, and $\tan\left(\frac{u}{2}\right)$, given that $\sin(u)=-\frac{3}{5}$ and $\cos(u)<0$.

4. Consider the equation $2\sin(4x)+4\sin(2x)=0$.

   a. (5 pts) Find all solutions x, in radians *and* degrees, to the equation in the interval $[0,2\pi)$. I expect *exact* solutions.

   b. (5 pts) Find *all* solutions x, in radians *and* degrees. Again, I expect *exact* solutions.

5. (5 pts) Find the *exact* value of $\sin(2u),\cos(2u),\tan(2u)$, given that $\sin(u)=-\frac{3}{4}$ and $\cos(u)>0$.

6. (5 pts) Re-write $\sin(4x)\cos(5x)$ as a sum or difference.