Due February 1, 11:59pm

1. (15 pts.) Complex Numbers Review

   (i) (a) $2\left(\cos\frac{5\pi}{6} + i\sin\frac{5\pi}{6}\right) = -\sqrt{3} + \frac{i}{2}$.

       (b) $1, \cos\frac{2\pi}{3} + i\sin\frac{2\pi}{3} = -\frac{1}{2} + i\frac{\sqrt{3}}{2}, -\frac{1}{2} - i\frac{\sqrt{3}}{2}$.

       (c) 0.

   (ii) As $\sqrt{-1} = \pm i \implies \sqrt{\sqrt{-1}} = \pm\sqrt{\pm i} = \pm\sqrt{i}$ and $\pm\sqrt{-i}$. The first is not simplfiable. The second is simply $\pm i\sqrt{i}$ which is a linearly independent from the first. Therefore there are a total of 4 values that this takes on.

   (iii) Yes, it is just $7 \cdot -2 = -14$.

2. (15 pts.) Two Sort Lists