1. Let $x = (-2, 1, 0)$ and $y = (0, 1, -2)$.

   a. What is $Lerp(x, y, -1)$ equal to?  
      Answer: $(-4, 1, 2)$.

   b. For what $\alpha$ is $Lerp(x, y, \alpha) = (-\frac{1}{2}, 1, -1\frac{1}{2})$?  
      Answer: $\alpha = \frac{3}{4}$.

2. A triangle has vertices $x, y, z$ as shown. Also shown are seven points $u_1 - u_7$. For the following choices of barycentric coordinates indicate which point has those coordinates.

   a. $\alpha = 1, \beta = 0, \gamma = 0$.  
      Answer: $x$.

   b. $\alpha = \frac{1}{2}, \beta = 0, \gamma = \frac{1}{2}$.  
      Answer: $u_7$.

   b. $\alpha = \frac{1}{6}, \beta = \frac{2}{3}, \gamma = \frac{1}{6}$.  
      Answer: $u_3$.

3. A quadrangle has vertex $u, v, w, x$ as shown. Give the formula for the point which is found using bilinear interpolation with $\alpha = \frac{1}{2}$ and $\beta = \frac{1}{3}$. Your formula should not involve $\alpha$ and $\beta$, instead use the particular values for $\alpha$ and $\beta$. (Remark: Here the point $u$ is found $\alpha = 0, \beta = 0$ and the point $v$ with $\alpha = 1, \beta = 0$.)

   Answer: $\frac{1}{3}u + \frac{1}{3}v + \frac{1}{6}x + \frac{1}{6}y$. 