1. Take $V=\langle 1,4\rangle.$ Determine $V_{\perp}.$

2. If L is the line given by y=4x+1, write an equation for the line perpendicular to L that passes through (3,4).

3. Take L to be the line y=4x+1. Find the point on L that is closest to the point (3,4).

4. Reflect the point (3,4) across the line y = 4x + 1.