Do all of your work directly on this sheet, using the back for scratch if necessary. Circle your answers.

Throughout all exercises on this quiz, $\mathbf{r}(t) = \langle 3\cos t, 3\sin t, 4t \rangle$ and C is the resulting curve. *Notice that formulas must have "=" in them somewhere! Use correct notation!*

1. Find a formula for the curvature $\kappa(t)$ of C.

2. Assuming that $\mathbf{r}(t)$ is a position vector, find a formula for the speed $v(t)$.