

Name: _____ ID #: _____ Serial #: _____

1. Find a basis and the dimension of the space of all vectors in \mathbb{R}^4 of the form (a, b, c, d) such that $d = a + b + c$.

2. Are the functions $f(x) = x$, $g(x) = x^2$, $h(x) = e^{2x}$ linearly dependent on $(-\infty, \infty)$? Justify.