

Name: \_\_\_\_\_

Math 233: Multivariate Calculus (Sect 13)

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### Quiz 3

Please write neatly and show all of your work.

1. Let  $P(-1, \frac{1}{2}, 3)$  be a point and  $\mathbf{n} = \langle 1, 4, 1 \rangle$  a vector. Find a scalar equation of the plane through  $P$  with normal vector  $\mathbf{n}$ .

2. Consider the cone  $4x^2 - y^2 + z^2 = 0$ , which is shown below:

(a) Find and sketch a trace in  $y = k$ , where  $k$  is a constant. Label the axes!

(b) Find and sketch a trace in  $z = k$ , where  $k$  is a constant. Label the axes!