

Time: 4 minutes: Closed book, notes, calculator.

1. Which curves arise as (x -, y -, or z -) traces for the surface

$$z = x^2 + 2y^2?$$

Indicate **all** correct answers.

- circles ellipses parabolas hyperbolas intersecting lines

2. In how many points does the line with parametric equations

$$x = 3t, \quad y = 2t, \quad z = 6t$$

intersect the surface

$$x^2 + y^2 + z^2 = 49?$$

- 0 1 2 4 infinitely many