

# QUIZ 6

**Time: 10min**

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1. Use differentials to estimate the value of  $f(x, y) = \ln(x - 3y)$  at the point  $(6.9, 2.01)$ .
2. The radius of a right circular cylinder is decreasing at a rate of  $1 \text{ in/s}$  while its height is increasing at a rate of  $3 \text{ cm/s}$ . At what rate is the volume of the cylinder changing when the radius is  $5 \text{ cm}$  and the height is  $10 \text{ cm}$ .

*Each problem is worth 5 pts.*