

Quiz 6 (100 points)**Due in class 6/22/2018****Name:**

NOTE: YOU MUST SHOW YOUR WORK TO RECEIVE FULL CREDIT. REMEMBER TO BOX YOUR FINAL ANSWER(S).

1. (40pts) Oil pours onto the floor at a rate of $7 \text{ cm}^3/s$. Assume the oil spreads out in a circular puddle with a height of 1 cm . What is the rate of change of the radius of the puddle when $r = 5$? Leave your solution in terms of π .
2. (30pts) Calculate the derivative of y given $ye^x + y^2 + e^y = 10$.
3. (30pts) Calculate the derivative of y given $\ln|y| = 5x^4$.