

MATH 046 020-QUIZ 1, SPRING 2018

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

1 (4 pts). Model a population  $P(t)$ , if its rate of growth is proportional to the amount at time  $t$ . Assume the rate constant is  $r > 0$ .

2 (6 pts). Determine if the equation  $y' = xy + 1$  is linear, separable, or exact. For exactness, use the differential form  $(xy + 1)dx - dy = 0$ . Explain your reasoning.