

11. [6 points] The polynomial  $P_3(x) = 2 - 3(x + e)^2 + 5(x + e)^3$  is the third-degree Taylor polynomial approximating the function  $g(x)$  for  $x$  near  $-e$ . Find the following values. Write “NI” if there is not enough information.

$g'(-e) =$  \_\_\_\_\_       $g(-e) =$  \_\_\_\_\_       $g'''(-e) =$  \_\_\_\_\_

$P_3^{(4)}(-e) =$  \_\_\_\_\_       $g(0) =$  \_\_\_\_\_       $P_3(0) =$  \_\_\_\_\_

12. [6 points] Match the differential equations to their corresponding slope fields.

i.  $y' = x^2 + y^2$  \_\_\_\_\_      iv.  $y' = x(y^2 - 1)$  \_\_\_\_\_

ii.  $y' = \frac{y}{x}$  \_\_\_\_\_      v.  $y' = x(1 - y^2)$  \_\_\_\_\_

iii.  $y' = -\frac{x}{y}$  \_\_\_\_\_      vi.  $y' = \frac{3x^2 + 1}{2y}$  \_\_\_\_\_

