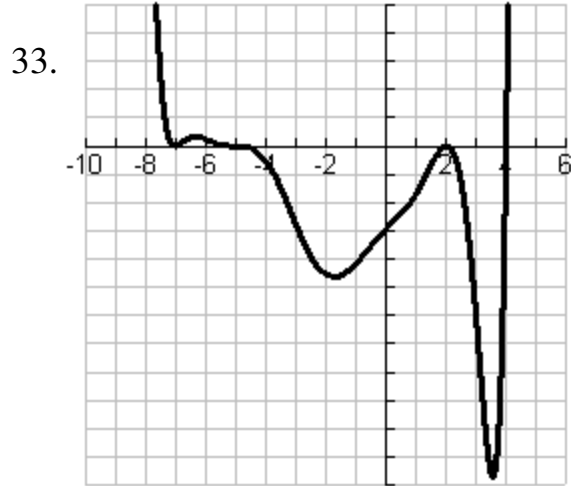


### AB Calculus Test #4 (31-40) Review Answers

31. A)  $\cos^2 x - \sin^2 x = \cos 2x$     B)  $e^x (\cos x + \sin x)$   
 C)  $1 + \ln x$

32. A)  $x^2 + \pi$                       B)  $-\cos x + C$                       C)  $\sin x + C$



34. A)  $\frac{dy}{dx} = \frac{y + 2 - 2xy^3}{3x^2y^2 - x}$

B)  $y = \frac{8}{9}x - \frac{7}{9}$

35. A)  $3 \sin x + C$                       B)  $\frac{2}{15}x^5 + C$   
 C)  $\frac{1}{e+1}x^{e+1} + C$                       D)  $\frac{9}{25}x^{\frac{5}{3}} + C$

36. A) A singular number is one where  $f'(x)$  does not exist  
 B) A derivative does not exist at endpoints or cusp points.  
 C) A stationary number is a number where  $f'(x) = 0$ .  
 D) We look for maximums or minimums at critical numbers, which are numbers where  $f'(x) = 0$  or  $f'(x)$  does not exist.  
 E) critical numbers:  $x = -2, -1$ ; maximum is at  $(-2, 3)$ ; minimum is at  $(-1, \frac{5}{2})$ ; point of inflection is  $(-\frac{3}{2}, \frac{11}{4})$

