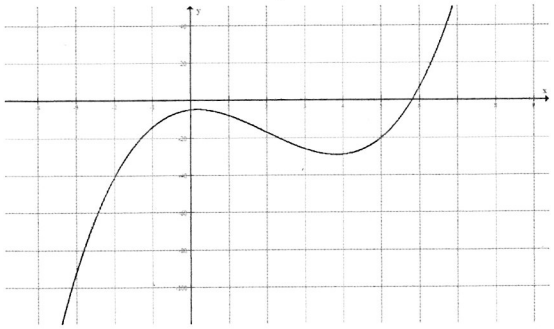
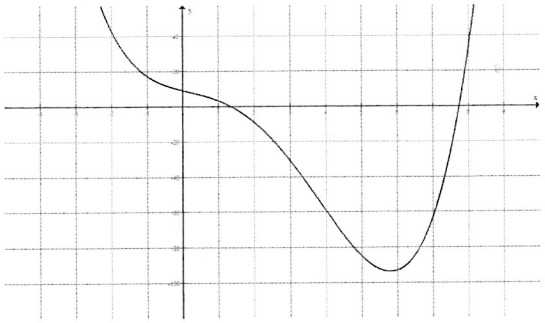
Calculus Study Guide: section 5.3

Given the function g(x) below:



Put a check next to each of the functions below that could be an antiderivative G(x). (There may be more than one answer.)



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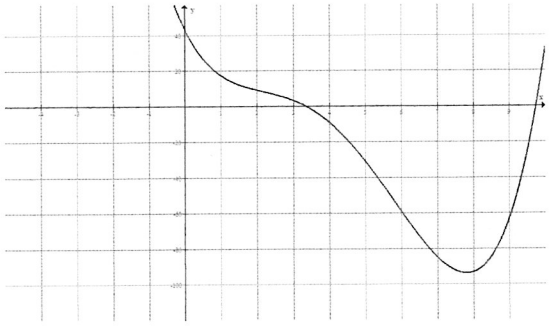

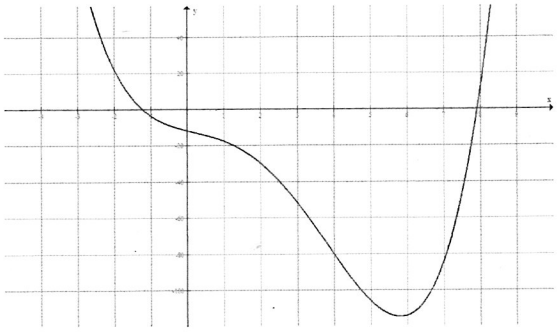

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Use the Fundamental Theorem of Calculus to evaluate:

$\int_0^{\pi/3} secx\ tanx\ dx$ $= sec\,x\ \Big|_0^{\pi/3} = sec\,\pi/3 - sec\,0$

$= 2 - 1 = 1$

answer = _____

$\int_2^4 \frac{3}{x} - 4x^3\ dx$ $= 3\ln x - x^4\ \Big|_2^4$

$= 3\ln 4 - 256 - (3\ln 2 - 16)$

$= 3\ln 4 - 3\ln 2 - 240$

$= 3\ln 2 - 240$

answer = _____

Find the area between $y = e^{2x}$ and the x-axis on [0, 1].

$\int_0^1 e^{2x}\,dx = \frac{1}{2}e^{2x}\ \Big|_0^1 = \frac{1}{2}e^2 - \frac{1}{2}e^0$

$= \frac{1}{2}e^2 - \frac{1}{2}$

answer: _____