NAME:_____ DATE: 02/15/2018

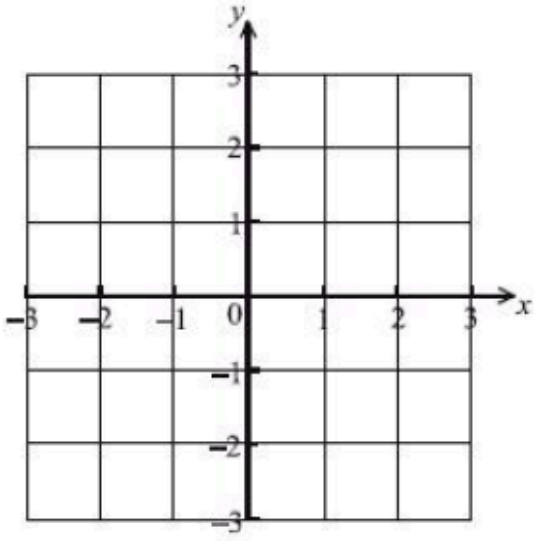
ASSIGNMENT: Volume of solids rotated around x-axis

Volume of revolution about the x-axis from $x = a$ to $x = b$	$V = \int_a^b \pi y^2 \, dx$

1.) *[SL-calc]*

Let $f(x) = x \cos(x - \sin x)$, $0 \le x \le 3$.

(a) Sketch the graph of f on the following set of axes.



(3)

(b) The graph of f intersects the x-axis when $x = a$, $a \neq 0$. Write down the value of a.

(1)

(c) The graph of f is revolved 360° about the x-axis from $x = 0$ to $x = a$.
Find the volume of the solid formed.

(4)
(Total 8 marks)

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Answer key: show all calculations to receive full marks

1) use your calculator for parts a & b;

For part C, input the squared function into the calculator and find the definite integral using 2nd Calc ∫ f(x)dx. Because the command term is "find," you'll need to show one intermediary step.

Input known values into the Volume formula for full credit.

1) V = 5.90 (3 SF!!!)

For the quiz Friday, you'll need to...
***calculate the normal to a tangent at a specific point on a curve**
***calculate the volume of a revolution**
***calculate area under a curve**
***the curve is friendly (a quadratic)**