Ord: ___ ___

Calc 2 MAC2312 | **Class-B** | Prof. JLF King *Touch*: 18Mar2017

B-Home: ___ ___ ___ 295pts

B3: ___ ___ ___ 160pts

Total: ___ ___ ___ 455pts

B3: Show no work. *NOTE*: Write **DNE** in a blank if the described object does not exist or if the indicated operation cannot be performed.

HONOR CODE: *"I have neither requested nor received help on this exam other than from my professor (or his colleague)."*
Name/Signature/Ord

Ord: ____

___ z The techical term for (the surface of) a doughnut is a/an [Circle]:

Abscess **Annulus** **Cumulus** **Dufus**
Frabjous **Gozinta** **Hoopoid** **Ring** **Spurious**
Sagittarius **Tardis** **Torus** **Wuss** **Zaurus**

___ a Fluid of weight-density $S :: \mathsf{lb/ft^3}$ fills a hemispherical tank [round side **down**, see blackboard] of radius $U :: \mathsf{ft}$. The work to evacuate the tank from its top is

$W := \int_{\_\_\_}^{\_\_\_\_\_} \cdot \mathrm{d}z.$

And $W =$ _____ $=\mathrm{Poly}(U, S)$.

___ b Force is the time-derivative of _____.

ITOf ⓣ,ⓓ,ⓜ: Units$\left(\begin{smallmatrix}\text{Hooke's}\\ \text{Const.}\end{smallmatrix}\right) =$ _____.

___ c $\int_2^5 \frac{4}{x-3}\,\mathrm{d}x =$ _____. $\int_{-4}^4 \frac{1}{t+5}\,\mathrm{d}t =$ _____.

___ d $\frac{A}{x-4}+\frac{B}{x+3}+\frac{C}{x+1} = \frac{2x^2-7x+2}{[x-4][x+3][x+1]}$ with $C =$ _____ $\in\mathbb{Q}$.

___ e $\int \cos(t)\,[\sin(t)]^5\,\mathrm{d}t =$ _____. [Subst.]

___ f $\int_2^3 \log(t)\,\mathrm{d}t = \log(R) + K$, where $R =$ _____
is a rationial number and $K =$ _____ $\in\mathbb{Z}$. [*Hint:* IBParts]

___ g That $h()$ is a ***rational function*** means that _____
_____
_____.

___ h $\int \frac{z}{1+z^2}\,\mathrm{d}z =$ _____. Thus [IBP]
$\int \arctan(z)\,\mathrm{d}z =$ _____.

End of Class-B