Ord: ___ ___

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

C3: Show no work. *NOTE*: Write **DNE** in a blank if the described object does not exist or if the indicated operation cannot be performed. Do ***not*** approx.: If your result is "$\sin(\sqrt{\pi})$" then write that rather than .9797$\cdots$.

___ z A multivariate polynomial, where each monomial has the same degree, is [circle]

monogamous **atrocious** **gregarious**
monic **expialadocious** **homogeneous**
manic **unitary** **Unitarian** **utilitarian**

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

___ b Fix a $G\geqslant 1$. Fnc $\mathbf{P}_G(t) := \mathsf{e}^{t\cdot G}\cdot\big(\cos(t),\sin(t)\big)$ parametrizes a spiral Ω_G. The length of one wrap of Ω_G from $\mathbf{(}1,0\mathbf{)}$ to $\mathbf{(}\mathsf{e}^{2\pi G},0\mathbf{)}$ is

⌞.....⌟

Our Ω_G crosses the x-axis with slope ⌞.....⌟.

___ c The width of the (parallel) top and bottom edges of a trapezoid **T** are W and W+10, and its height is 12. So Area(**T**)= ⌞.....⌟.

Geometrically, $\lim_{W\nearrow\infty} Y_W=$ ⌞.....⌟ and $Y_0=$ ⌞.....⌟,

where $Y_W \overset{\text{note}}{=\!=}$ ⌞.....⌟ denotes the distance of Centroid(**T**) above Bottom(**T**).

___ d The quotient and remainder polynomials,

$q(x)=$ ⌞.....⌟

& $r(x)=$ ⌞.....⌟,

satisfy $B=[q\cdot C]+r$ and $\mathrm{Deg}(r)<\mathrm{Deg}(C)$, where $B(x):=2x^3$ and $C(x):=x^2+3x+2$.

___ e That a spiral Ω is ***equi-angular*** precisely means that

⌞.....⌟

⌞.....⌟

⌞.....⌟

⌞.....⌟.

f Triangle **T**, with vertices at $\mathbf{(}0,\pm 3\mathbf{)}$ and $\mathbf{(}9,0\mathbf{)}$, has area ⌞.....⌟. Rotating **T** about the the $[y=3+x]$–line gives a SoR with volume ⌞.....⌟.

[*Hint:* Where is the centroid of **T**? And who is Mr. Pappus?]

End of Class-C

C-Home:	___ ___ ___	290pts
C3:	___ ___ ___	155pts
Total:	___ ___ ___	445pts

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

Ord: ⌞.....⌟⌞.⌟⌞.⌟