8]gbYm'K cf`X g'<c`]XUm'9l hfUj U[UbnU. A U[] W^{*} @][\ hgž'UbX': Ygh]j]h]Yg'5k U]h°

K U`h'8]gbYm'K cf`X'FYgcfhž'6Um'@U_Yž': @ž'l G5'!'5g'h\Y\c`]XUm'gYUgcb'UddfcUW\Ygž'Yl W]hYa Ybh']g'VfYk]b['Uh'K U`h 8]gbYm'K cf`X'FYgcfhž'k\YfY'h\Y'YbW\Ubha Ybh'cZ'ZYgh]j]h]Yg'k]``ibZc`X'Zfca 'Bcj Ya VYf''('hc'8YWYa VYf'' %ž'&\$&)"'; i Yghg'WUbYl dYWh'U'k\]f`k]bX'cZ'ZYgh]j Y'XYWcfž'gdYW]U`'ZccX'cZZYf]b[gžYl Wig]j Y'YbhYfhU]ba Ybhž'UbX'VfUbX!bYk 'a YfW\UbX]gYž'U``XYg][bYX'hc'gdfYUX'\c`]XUm'W\YYf'UWfcgg'h\Y'dUf_g'UbX'fYgcfhg"

H\fci [\ci h'h\]g'^cmci g'gYUgcbž'K U`h'8]gbYm'K cf`X'k]``'fc``'ci h\c`]XUm'UWh]j]h]Yg'UWfcgg']hg'Zci f'h\Ya Y'dUf_gž'8]gbYm'Gdf]b[gžUbX'8]gbYm'FYgcfh'<chY`g"'+hg'U'[fYUh'h]a Y'hc'[Uh\Yf'ZUa]`m'UbXZf]YbXg'Zcf'U'hfi `m'a U[]WU`'YIdYf]YbW''

$: Ygh]j]h]Yg`Uh`h\Y`DUf_g$

9UWX 'dUf_'\Ug']hg'ck b'gdYW]U``\][\`][\hg'h\Uh'dfca]gY'hc
WUdh]j UhY'j]g]hcfg"' = AU[]W?]b[Xca 'DUf_ž'AU]b'GhfYYhž'I "G"5"'k]``
VY'XYW_YX'ci h']b'j]VfUbh'\c`]XUm'XYWcfUh]cbg'dYfZYWh'Zcf'h\cgY
= bghU[fUa'acaYbhg"'C`UZ'UbX'\]g'UXcfUV`Y'gbck[]Y'g]V`]b[g'UfY
gYh'hc'aU_Y'7]bXYfY``U'7Ugh`Y'Yj Yb'acfY'XY`][\hZ\`'h\]g'mYUf"
@Yhg'bch'Zcf[Yh'h\Y'fYhifb'cZ'h\Y']b[`Y'7fi]gYž'UXX]b['U'ib]eiY`m
ZYgh]j Y'hk]gh'hc'h\Y'WUgg]WUhhfUWh]cb"

Cj Yf'Uh'8]gbYmg'<c``mk ccX'Ghi X]cgž'h\Y'Uha cgd\YfY'k]``'VY]bZi gYX'k]h\'^cm'Ug'Gi bgYh'6ci `Yj UfX'g\ck WUgYg'ghi bb]b[

\c`]XUm'X]gd`Umg`]bgd]fYX`Vm`WUgg]WhU`Yg``]_Y` A]W_Ym g
7\f]gha Ug`7Ufc` `UbX` Hcm'Ghcfm" `: Ua]`]Yg`WUb`^c]b`]b`h\Y`: fcnYb
G]b[!5`cb[`7Y`YVfUh]cbž'k\YfY`a i g]WU`g`UbX`\c`]XUm'W\YYf
Wca V]bY`]bhc`cbY``]j Y`m'Yj Ybh"`A]bb]Y g`<c`]XUm'8]bY`U`gc`a U_Yg
U`fYhi fb`Zcf`h\cgY``cc_]b[`hc`Yb^cm'U`gdYW]U``X]bbYf`k]h\`A]bb]Y
A ci gY`UbX`Zf]YbXgž'U`h\ci [\`fYgYfj Uh]cbg`k]```VY`fYei]fYX"

8]gbYmg'5b]a U``?]b[Xca 'Vf]b[g']hg'ck b'i b]ei Y'Z'Uj cf'hc'h\Y WY`YVfUh]cb"'8]gWcj Yfm'=g`UbX'k]``'ZYUhi fY'Ufh]gUb!gW'`dhYX di ddYhg'cZ'k\]a g]WU`'UfWh]WUb]a U`gž'Ybgi f]b['U'k cbXYf!Z]``YX YI dYf]YbWY'Zcf'[i Yghg"'H\Y'HfYY'cZ'@]ZY'k]``'XUnn`Y'k]h\'U'\c`]XUm `][\h'g\ck ž'Wca d`YhY'k]h\'WUdh]j Uh]b['Ub]a Uh]cbg'UbX']a U[Yfm"

$HY \times mcZ8]gbYmGdf]b[g$

8cb ha]gg'h\Y'YbW\Ubh]b['gYUgcbU``Uha cgd\YfY'Uh'h\Y'8]gbYmFYgcfh'<chY`gž'k\YfY'GUbhU'7`Ui g'\]a gY`Z'k]```VY'Uj U]`UV`Y'Zcfd\chcg'UbX'\c`]XUm'k]g\Yg'i bh]``8YWYa VYf'&("'9UW\'\chY``k]``dfci X`m'g\ck WUgY'ZYgh]j Y'XYWcf'U`cb['k]h\'gYUgcbU``ZccX'UbXVYj YfU[Yg'hc'hUbhU`]nY'mci f'dU`UhY"

9D7CH g'=bhYfbUh]cbU`: Ygh]j U`cZ'h\Y < c`]XUmg

5 b c h\ Y f`\][\`][\h`c Z`h\ Y`gY Ugc b`]g`h\ Y`9D7 C H`\bhY fb Uh]c b U`
: Ygh]j U``c Z`h\ Y`< c`]X Umgž`hU_]b ['d`UWY`Zfca 'B cj Ya VYf`&, 'hc
8 Y WYa VY f`' \$"'?]W_]b ['c ZZ'h\ Y`X Um`UZhY f`H\ Ub_g[]j]b [ž'h\ Y`ZYgh]j U`
c ZZY fg`U`XY`][\hZ\``V`Y b X`c Z`[`c V U``Zc c Xgž`Y b hY fhU]ba Y b hž`Ub X
W``hi fU``ghc fmhY``]b ['Ufci b X`h\ Y`K c f`X`G\ c k WUgY"

 $\label{thm:continuous} F Y hi fb]b [`ZUj cf]hYg`]b Wi XY`h\Y`7 UbX`Y`][\h`Dfc WYgg]cbU`ž'k \] W fYhY``g`h\Y`bUh]j]hm`ghc fm`UWWcadUb]YX`Vm`U``]j Y`cfWXYghfU`UbX WY`YVf]hm`b Uff Uhcfg" ; i Yghg`WUb`Yb^cm`b][\h`m`dYfZcfaUbWYgghUfh]b[`Uh`) `d"a"ž'k]h\`UXX]h]cbU``g\ckg`Uh`*.() `d"a"`UbX`, .%) d"a"`H\Y`\][\`][\h`cZ'h\Y`Yj Yb]b[`]g`h\Y`ghibb]b[`Uff Um`cZ``][\hg UbX`aig]Wh\Uh`Vf]b[`h\Y`\c`]XUm`gd]f]h`hc``]ZY"$

 $\label{eq:continuous} $J = \int_{\mathbb{R}^n} \int_{\mathbb$

H\fci [\ci h'h\Y'ZYgh]j U`ž'<c`]XUm'GhcfmhY``Yfg'k]``'[fUWY'j Uf]ci g dUj]`]cbgž'g\Uf]b['ZYgh]j Y'hfUX]h]cbg'Zfca 'X]ZZYfYbh'W' `hi fYg" DYfZcfa Yfg'k]``']bWi XY'h\Y'`]_Yg'cZ'DÄfY'BcÇ`']b': fUbWYž': Uh\Yf 7\f]gha Ug']b'h\Y'I ?ž'UbX'h\Y'Ub]a UhYX'W\UfUWhYfg'cZ'Bcfk Umg@Ug'DcgUXUg'7Y`YVfUh]cb"'5XX]h]cbU``mž'[i Yghg'WUb'hU_Y'U'\c`]XUm!h\Ya YX'hci f'cZ'@jj]b['k]h\'h\Y'@UbXž'k\]W\'k]``'VY'VYUi h]Z ``m]`i a]bUhYX'k]h\'7\f]gha Ug'`][\hg"

GdYWJU`CZZYfg'UbX'AcfY

Hc 'a U_Y 'h\]g'\c`]XUm'gYUgcb'Yj Yb 'gk YYhYfž'h\ YfY g'gca Yh\]b['hc VY'gU]X'Zcf'h\ Y'gdYW]U``cZZYfg'Uj U]`UV`Y'Zfca ' \Rightarrow `m'%\$'Zcf'hfUj Y` XUhYg'VYhk YYb'C WhcVYf'%&'UbX'7\f]gha Ug'8 Um''8]gbYm'F Ygcfh \chY``ghUmg'WUb'gUj Y'[i Yghg'i d'hc'&\$i ž'UbX'U'` %\$\$'8]gbYm G\cdd]b['UbX'8]b]b['[]Zh'WUfX'k]```VY'[]j Yb'k]h\ 'U'Zci f!XUm'h]W_Yh dUW_U[Y"

Gc a Uf_'mci f'WU`YbXUfg'UbX'ghUfh'd`Ubb]b['mci f'j]g]h'hc
YI dYf]YbWY'h\Y'gdUf_`Y'UbX'a U[]WcZ'K U`h'8]gbYm'K cf`X'h\]g
\c`]XUm'gYUgcb"'=h g'U'i b]ei Y'cddcfhi b]hm'hc'WfYUhY'`Ugh]b[
a Ya cf]Yg'k]h\'`cj YX'cbYgž'gi ffci bXYX'Vm'h\Y''cm'UbX'k cbXYf
h\Uh'cb`m'8]gbYm'WUb'dfcj]XY"

8 YhU]`g	
Cfh	KU`h'8]gbYm'Kcf`X'FYgcfhž'6Um'@U_Yž':@ž IG5
EiY``Yb	k k k "dcg]h]j Y`mcgWYc`U"WcaX]gbYmdUf_gV`c["Wca

6Ygi WXYb G]Y i bg Ui Z. a Y]b!k]Yb bYh