Calculus II Quiz 5 110/05/31

請在空白紙上依序寫出各題 3 個答案, 計算過程請另紙處理、不要寫在答案紙上。

每人限交 A4 大小答案紙一頁，右上角請務必寫上學號姓名。

((a)寫出可以真正算出的 iterated integral(含各個變數的上下限)，化簡為一個變數的積分寫在(b)，再將整理後的答案寫在(c))

1. Find volume V of the solid lying inside the cylinder $x^2+4y^2=4$, above the xy–plane and below the plane $z=2+x$; $V=$ (1a) = (1b) = (1c).
2. Find surface area A of paraboloid $z=1-x^2-y^2$ in the first octant; $A=$ (2a) = (2b) = (2c).
3. Find volume V of the solid enclosed by the cone $z=\sqrt{3(x^2+y^2)}$ and sphere $x^2+y^2+z^2=1$; $V=$ (3a) = (3b) = (3c).

4. $\int_0^2\int_0^{\sqrt{2x-x^2}} x\,dydx =$(4a)= (4b) = (4c) .

5. $\iiint_T \frac{1}{\sqrt{x^2+y^2}}dV =$ (5a) = (5b) = (5c), $T: 0\le x\le\sqrt{9-y^2}\,, 0\le y\le 3, 0\le z\le\sqrt{9-(x^2+y^2)}$.

6. $\int_0^1\int_{\sqrt{x}}^1 \sin\left(\frac{y^3+1}{2}\right)dydx =$ (6a)= (6b)= (6c) .

7. $\iint_\Omega e^{x^2}dA$=(7a)= (7b)= (7c), Ω is the bounded region bounded by x-axis, $2y=x, x=2$.