ĐÁP ÁN TOÁN 12

II. TỰ LUẬN

Bài 1: (1đ)

$$\begin{cases} u = 2x-1 \\ dv = \cos x dx \end{cases} \Rightarrow \begin{cases} du = 2dx \\ v = \sin x \end{cases} \quad (0.25)$$

$$F(x) = (2x-1)\sin x + 2\cos x + C \quad (0.25)$$

$$F(\frac{\pi}{2}) = \pi - 1 + C \rightarrow C = 3 - 2\pi \quad (0.25)$$

$$F(x) = (2x-1)\sin x + 2\cos x + 3 - 2\pi \quad (0.25)$$

Bài 2: (1đ)

$$(1+3i)z + (5-i)\bar{z} = 4-4i$$

$$\rightarrow (1+3i)(a+bi) + (5-i)(a-bi) = 4-4i$$

$$\rightarrow 6a - 4b + (2a-4b)i = 4-4i \quad (0.25)$$

$$\rightarrow \begin{cases} 6a-4b = 4 \\ 2a-4b = -4 \end{cases} \quad (0.25)$$

$$\rightarrow \begin{cases} a = 2 \\ b = 2 \end{cases} \quad (0.25)$$

$$\rightarrow |z| = 2\sqrt{2} \quad (0.25)$$

Bài 3: (1đ)

a) $VTCP \vec{a}_{d_1} = (2,-2,-3), M_1(4,-3,-2)$

$VTCP \vec{a}_{d2} = (-2,3,3), M_2(2,-2,1)$ (0.25)

$[\vec{a}_{d_1}, \vec{a}_{d_2}].\vec{M_1M_2} = 0 \rightarrow$ d_1 cắt d_2 (0.25)

b) $(P): \begin{cases} Qua M_1(4,-3,-2) \\ VTPT\ n_P = [\vec{a}_{d_1}, \vec{a}_{d_2}] \end{cases}$ (0.25)

$(P): 3x + 2z - 8 = 0$ (0.25)

Bài 4: (1đ)

a) R = d(I,(P)) = 3 (0.25)

$(S): (x+1)^2 + (y-2)^2 + (z-3)^2 = 9$ (0.25)

b) $\Delta: \begin{cases} x = 1+t \\ y = -2+2t \\ z = -3+3t \end{cases}$

Ta có $M \in \Delta, IM = 4$

$M(1+t, -2+2t, -3+3t)$

$\rightarrow 14t^2 - 48t + 40 = 0$

$\rightarrow \left[\begin{array}{l} t = 2 \\ t = \dfrac{10}{7} \end{array}\right.$

$M(3,2,3)$ (0.25)

Đáp số $M(\dfrac{17}{7}, \dfrac{6}{7}, \dfrac{9}{7})$ (0.25)