ĐÁP ÁN & BIỂU ĐIỂM ĐỀ 1 (Toán 11)

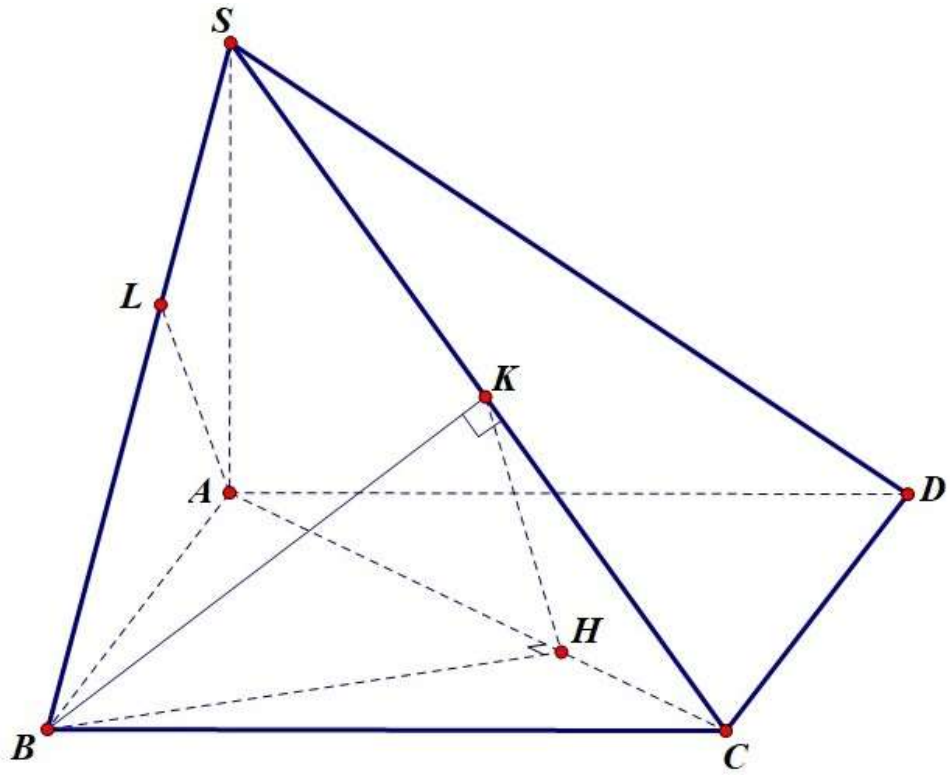
Bài 1a: $A=\lim\limits_{x\to 3}\dfrac{x^2-9}{x^3-3x^2}$	**1đ**
$=\lim\limits_{x\to 3}\dfrac{(x-3)(x+3)}{(x-3)x^2}$	0.25x2
$=\lim\limits_{x\to 3}\dfrac{x+3}{x^2}=\boxed{\dfrac{2}{3}}$	0.25x2
Bài 1b: $B=\lim\limits_{x\to -2}\dfrac{\sqrt{3x+7}-\sqrt{2x+5}}{x+2}$	**2đ**
$=\lim\limits_{x\to -2}\dfrac{\left(\sqrt{3x+7}-\sqrt{2x+5}\right)\left(\sqrt{2x+5}+\sqrt{3x+7}\right)}{(x+2)\left(\sqrt{2x+5}+\sqrt{3x+7}\right)}=\lim\limits_{x\to -2}\dfrac{(3x+7)-(2x+5)}{(x+2)\left(\sqrt{2x+5}+\sqrt{3x+7}\right)}$	0.5x2
$=\lim\limits_{x\to -2}\dfrac{1}{\sqrt{2x+5}+\sqrt{3x+7}}=\boxed{\dfrac{1}{2}}$	0.5x2
Bài 1c: $C=\lim\limits_{x\to +\infty}\left(\sqrt{4x^2-3x}-\sqrt[3]{8x^3+x^2}\right)$	**2đ**
$=\lim\limits_{x\to +\infty}\left[\sqrt{4x^2-3x}-2x+2x-\sqrt[3]{8x^3+x^2}\right]$	0.25
$=\lim\limits_{x\to +\infty}\left[\dfrac{-3x}{\sqrt{4x^2-3x}+2x}-\dfrac{x^2}{4x^2+2x.\sqrt[3]{8x^3+x^2}+\left(\sqrt[3]{8x^3+x^2}\right)^2}\right]$	0.25x2
$=\lim\limits_{x\to +\infty}\left[\dfrac{-3}{\sqrt{4-\dfrac{3}{x}}+2}-\dfrac{1}{4+2.\sqrt[3]{8+\dfrac{1}{x}}+\left(\sqrt[3]{8+\dfrac{1}{x}}\right)^2}\right]$	0.25x2
$=-\dfrac{3}{4}-\dfrac{1}{12}=\boxed{\dfrac{-5}{6}}$	0.25x3
Bài 2a: $BH\perp(SAC)$	**2đ**
• $BH\perp AC$ (gt)	0.5
• $BH\perp SA$ $\left(do\ \begin{cases}SA\perp(ABCD)\\ BH\subset(ABCD)\end{cases}\right)$	0.5x2
• Vậy: $BH\perp(SAC)$	0.5
Bài 2b: $HK\perp SC$	**2đ**
• $BH\perp(SAC)\Rightarrow BH\perp SC$ (1)	0.5
• $BK\perp SC$ (2)	0.5
• (1), (2) $\Rightarrow SC\perp(BHK)\Rightarrow HK\perp SC$	0.5x2
Bài 2c: L là chân đường phân giác trong của $\widehat{SAB}$. Tính góc giữa AL và BK.	**1đ**

• $\begin{cases} SB = a\sqrt{10} = BC \\ BC \perp SB \end{cases}$ nên K là trung điểm của SC và $BK = \frac{1}{2}a\sqrt{10}.\sqrt{2} = a\sqrt{5}$ • $S_{\Delta SAL} + S_{\Delta LAB} = S_{\Delta SAB} \Leftrightarrow AL = \frac{SA.AB}{(SA+AB).\sin 45^0} = \frac{4}{3}a$	0.25 (*Tính được AL hoặc BK*)
• $\overrightarrow{BK} = \frac{1}{2}\left(\overrightarrow{BS} + \overrightarrow{BC}\right) = -\frac{1}{2}\overrightarrow{SA} - \frac{1}{2}\overrightarrow{AB} + \frac{1}{2}\overrightarrow{AD}$	0.25
• $\overrightarrow{AL} = -\overrightarrow{SA} + \overrightarrow{SL} = -\overrightarrow{SA} + \frac{2}{3}\overrightarrow{SB} = -\frac{1}{3}\overrightarrow{SA} + \frac{2}{3}\overrightarrow{AB}$	0.25
• $\cos\left(\widehat{\overrightarrow{AL},\overrightarrow{BK}}\right) = \frac{\left\|\overrightarrow{AL}.\overrightarrow{BK}\right\|}{AL.BK} = \frac{\frac{2}{3}a^2}{\frac{4}{3}a.a\sqrt{5}} = \boxed{\frac{1}{2\sqrt{5}}}$.	0.25

Cách 2:

- $\left(\widehat{\overrightarrow{AL},\overrightarrow{BK}}\right) = \left(\widehat{\overrightarrow{AL},\overrightarrow{LM}}\right)$ với $LM//BK$ ($M \in SC$): **0.5**.
- Tính được $AL = \frac{4}{3}a$ **hoặc** $BK = \sqrt{5}.a$: **0.25**
- Ra kết quả đúng: **0.25**

Hình vẽ



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