

2011 -	
:	3 :

	مجزأة												
04		$z_C = z_A \times z_B \quad z_B = e^{i\frac{\pi}{3}} \quad z_A = -1 + i$	(1)										
	01.5	$z_C = \sqrt{2} e^{i\frac{13\pi}{12}} \quad z_A = \sqrt{2} e^{i\frac{3\pi}{4}}$	(2)										
	01.5	$z_C = \frac{-1 - \sqrt{3}}{2} + \frac{1 - \sqrt{3}}{2}i \quad z_B = \frac{1}{2} + \frac{\sqrt{3}}{2}i$	(3)										
	01	$\sin \frac{13\pi}{12} = \frac{\sqrt{2} - \sqrt{6}}{4} \quad \cos \frac{13\pi}{12} = \frac{-\sqrt{2} - \sqrt{6}}{4}$	(3)										
04		: X	(1)										
	03	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">x_i</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">5</td> </tr> <tr> <td style="padding: 5px;">$P(\{X = x_i\})$</td> <td style="padding: 5px;">$\frac{10}{66}$</td> <td style="padding: 5px;">$\frac{30}{66}$</td> <td style="padding: 5px;">$\frac{20}{66}$</td> <td style="padding: 5px;">$\frac{6}{66}$</td> </tr> </table>	x_i	2	3	4	5	$P(\{X = x_i\})$	$\frac{10}{66}$	$\frac{30}{66}$	$\frac{20}{66}$	$\frac{6}{66}$	
x_i	2	3	4	5									
$P(\{X = x_i\})$	$\frac{10}{66}$	$\frac{30}{66}$	$\frac{20}{66}$	$\frac{6}{66}$									
	01	$E(X) = \frac{20 + 90 + 80 + 30}{66} = \frac{220}{66} = 3,33 :$	(2)										
05	01	$C(2;6;-1) \quad B(-3;1;4) \quad A(1;2;-3)$ $\overline{AB}(1;4;2) \quad \overline{AB}(-4;-1;7)$	(1)										
	01	$2x - y + z + 3 = 0 : (ABC)$	(2)										
		$(\Delta) \quad (-5;9;4) \quad I$	(3)										
		: (ABC) I											

	01	$\begin{cases} x = -5 + 2t \\ y = 9 - t \\ z = 4 + t \end{cases} ; t \in R$	
	01	$J(-1;7;6) : (ABC) (\Delta) J$	(4)
	01	$IJ = \sqrt{16+4+4} = 2\sqrt{6} : (ABC) I$	(5)
07		$f(x) = x - \frac{1}{1+e^x}$	
	0.5	$\lim_{x \rightarrow +\infty} f(x) = \lim_{x \rightarrow +\infty} \left(x - \frac{1}{1+e^x} \right) = +\infty$	(1)
	0.5	$\lim_{x \rightarrow -\infty} f(x) = -\infty$	
	0.5	$f'(x) = 1 + \frac{e^x}{(1+e^x)^2} > 0$	(2)
	0.5	$\lim_{x \rightarrow +\infty} (f(x) - x) = \lim_{x \rightarrow +\infty} \left(-\frac{1}{1+e^x} \right) = 0$	(3)
	0.5	$+\infty (C) (\Delta): y = x$	
	0.25	$\lim_{x \rightarrow -\infty} (f(x) - x + 1) = \lim_{x \rightarrow -\infty} \left(1 - \frac{1}{1+e^x} \right) = 0$	
	0.5	$-\infty (C) (\Delta'): y = x - 1$	
	0.25	$:(\Delta) (C) (4)$	
	0.5	$:(\Delta) (C) f(x) - x = -\frac{1}{1+e^x} < 0$	
	0.5	$:(\Delta') (C)$	
	0.5	$:(\Delta') (C) f(x) - x + 1 = 1 - \frac{1}{1+e^x} = \frac{e^x}{1+e^x} > 0$	
	01	$) 0 < \alpha < \frac{1}{2} \quad \alpha \quad f(x) = 0$	(5)
	0.5	$e^\alpha + 1 = \frac{1}{\alpha} \quad \alpha - \frac{1}{1+e^\alpha} = 0 \quad f(\alpha) = 0$	
	01.5	$:(\alpha \approx 0.4) : (\Delta') (\Delta) (C)$	(6)

