

2011 -	
:	3 :

	مجزأة						
04							
	1.25						
	1.25						
	0.75						
	0.75						
04	0.5						
	01						
	01						
	01						
	0.5						
05	1.25						
	1.25						
	1.25						
	1.25						

$$\cdot u_{n+1} = \frac{1}{2}u_n + \frac{9}{4} \quad u_0 = 2 : \quad (u_n)$$

$$\cdot v_n = 2u_n - 9$$

$$\cdot v_2 = -\frac{5}{4} \quad v_1 = -\frac{5}{2} \quad v_0 = -5 \quad u_2 = \frac{31}{8} \quad u_1 = \frac{13}{4} \quad (1)$$

$$\cdot \frac{1}{2} \quad (v_n) \quad v_{n+1} = \frac{1}{2}v_n \quad (2)$$

$$\cdot v_n = -5 \times \left(\frac{1}{2}\right)^n : n \quad v_n \quad (3)$$

$$\cdot u_n = \frac{1}{2}v_n + \frac{9}{2} = -5 \times \left(\frac{1}{2}\right)^{n+1} + \frac{9}{2} : n \quad u_n \quad (4)$$

$$C_{12}^2 = 66 :$$

$$\cdot P(A) = \frac{C_3^2 + C_4^2 + C_5^2}{66} = \frac{19}{66} \quad (1)$$

$$\cdot P(A) = 1 - \frac{C_7^2}{66} = \frac{45}{66} = \frac{15}{22}$$

$$P(A \cap B) = \frac{C_5^2}{66} = \frac{10}{66} = \frac{5}{33}$$

$$P(A \cap B) \neq P(A) \times P(B) \quad B \quad A \quad (2)$$

$$\cdot \frac{8}{3} + 2i \quad (: \quad (1)$$

$$\cdot y = -x \quad (: \quad (2)$$

$$\cdot 3k \quad (: \quad (3)$$

$$\cdot 2 - i\sqrt{2} \quad (: \quad (4)$$

07

0.5

$$f(x) = x - \frac{1}{1+e^x}$$

01

$$\lim_{x \rightarrow -\infty} f(x) = -\infty \quad \lim_{x \rightarrow +\infty} f(x) = \lim_{x \rightarrow +\infty} \left(x - \frac{1}{1+e^x} \right) = +\infty \quad (1)$$

0.5

$$f'(x) = 1 + \frac{e^x}{(1+e^x)^2} > 0 \quad (2)$$

0.25

$$\lim_{x \rightarrow +\infty} (f(x) - x) = \lim_{x \rightarrow +\infty} \left(-\frac{1}{1+e^x} \right) = 0 \quad (3)$$

 $+\infty \quad (C)$
 $(\Delta): y = x$

0.5

0.25

$$\lim_{x \rightarrow -\infty} (f(x) - x + 1) = \lim_{x \rightarrow -\infty} \left(1 - \frac{1}{1+e^x} \right) = 0$$

 $-\infty \quad (C)$
 $(\Delta'): y = x - 1$

0.5

 $:(\Delta) \quad (C) \quad (4)$

0.5

$$:(\Delta) \quad (C) \quad f(x) - x = -\frac{1}{1+e^x} < 0$$

 $:(\Delta') \quad (C)$

01

$$:(\Delta') \quad (C) \quad f(x) - x + 1 = 1 - \frac{1}{1+e^x} = \frac{e^x}{1+e^x} > 0$$

0.5

$$) \quad 0 < \alpha < \frac{1}{2} \quad \alpha \quad f(x) = 0 \quad (5)$$

 $($

01.5

$$e^\alpha + 1 = \frac{1}{\alpha} \quad \alpha - \frac{1}{1+e^\alpha} = 0 \quad f(\alpha) = 0$$

$$(\alpha \approx 0.4) \quad) \quad (\Delta) \quad (\Delta) \quad (C) \quad (6)$$

