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تنبيه: آخر أجل لإعادة الفرض إلى المركز الجهوي: 15 - 02 - 2011

: ( 05 )

$$f(x) = 1 - x + \frac{x}{\sqrt{x^2 + 1}} : \mathbb{R} \quad f$$

$$\cdot (O; \vec{i}; \vec{j}) \quad f \quad (C_f)$$

$$\cdot f'(0) \quad f'(x) \quad (1)$$

$$\cdot 1 - (x^2 + 1)\sqrt{x^2 + 1} \leq 0 : x \quad (2)$$

$$\cdot f \quad (3)$$

$$\cdot -\infty \quad (C_f) \quad (D): y = -x : \quad (4)$$

$$\cdot +\infty \quad (C_f) \quad (D'): y = -x + 2 : \quad (5)$$

$$\cdot \frac{7}{4} < \alpha < 2 \quad \alpha \quad f(x) = 0 \quad (6)$$

$$\cdot (C_f) \quad A(0;1) \quad (7)$$

$$\cdot (C_f) \quad (8)$$

$$\cdot f(x) = -x + m \quad m \quad m \quad (9)$$

: ( 04 )

$$g(x) = \frac{2x}{1+x} - \ln(1+x) : [0; +\infty[ \quad g$$

$$\cdot [0; +\infty[ \quad g \quad (1)$$

$$\cdot \alpha \in ]3,9; 4[ \quad \alpha \quad g(x) = 0 \quad (2)$$

$$\cdot [0; +\infty[ \quad g(x) \quad (3)$$

$$f(x) = e^{-x} \ln(1 + e^{2x}) : \mathbb{R} \quad f \quad (4)$$

$$\cdot \|\vec{j}\| = 4cm \quad \|\vec{i}\| = 1cm \quad (O; \vec{i}; \vec{j}) \quad (C) \quad (5)$$

$$\cdot -\infty \quad f \quad \lim_{t \rightarrow 0} \frac{\ln(1+t)}{t} = 1 \quad (6)$$

$$\cdot +\infty \quad f \quad \cdot f(x) = \frac{2x}{e^x} + \frac{\ln(1 + e^{-2x})}{e^x} \quad (7)$$

$$f\left(\frac{\ln \alpha}{2}\right) \approx 0,8 \quad \frac{\ln \alpha}{2} \approx 0,6 \quad (C) \quad f\left(\frac{\ln \alpha}{2}\right) = \frac{2\sqrt{\alpha}}{1+\alpha} \quad ($$

: ( 04 )

:  $\mathbb{C}$  (1

$$z^2 - 2z + 5 = 0$$

$$z^2 - 2(1+\sqrt{3})z + 5 + 2\sqrt{3} = 0$$

E D C B A :  $(o; \vec{u}; \vec{v})$  (2

$$z_E = i\sqrt{3} \quad z_D = 2 - i\sqrt{3} \quad z_C = 1 - 2i \quad z_B = 1 + \sqrt{3} + i \quad z_A = 1 + 2i :$$

$$ABC \quad \frac{z_C - z_B}{z_A - z_B} \quad -$$

$$ABC \quad (c) \quad -$$

$$(c) \quad E \quad D \quad -$$

$$E \quad D \quad C \quad B \quad A \quad (c) \quad -$$

: ( 03 )

4cm  $(O; \vec{u}; \vec{v})$

$$z_B = e^{-i\frac{5\pi}{6}} \quad B \quad z_A = i \quad A$$

$$r \quad B \quad C \quad \frac{2\pi}{3} \quad O \quad r \quad (1$$

$$z_C = e^{-i\frac{\pi}{6}} \quad C \quad r \quad ($$

$$C \quad B \quad A \quad z_C \quad z_B \quad ($$

$$2 \quad -1 \quad 2 \quad C \quad B \quad A \quad D \quad (2$$

$$D \quad z_D = \frac{\sqrt{3}}{2} + \frac{1}{2}i \quad D \quad ($$

D C B A (

$$h \quad D \quad E \quad 2 \quad A \quad h \quad (3$$

$$E \quad z_E = \sqrt{3} \quad E \quad h$$

$$CDE \quad \frac{z_D - z_C}{z_E - z_C} \quad (4$$

: ( 04 )

$$\begin{aligned}
 & \cdot 7 \quad \cdot 7 \quad 2^{3n} - 1 : n \quad (1) \\
 & \cdot 7 \quad 2^{3n+2} - 4 \quad \cdot 7 \quad 2^{3n+1} - 2 \quad -
 \end{aligned}$$

$$\cdot 2^n \quad 7 \quad n \quad (2)$$

$$\cdot P \in \mathbb{N} \quad \cdot A_P = 2^P + 2^{2P} + 2^{3P} \quad (3)$$

$$\cdot P = 3n + 2 \quad P = 3n + 1 \quad P = 3n : \quad 7 \quad A_P \quad -$$