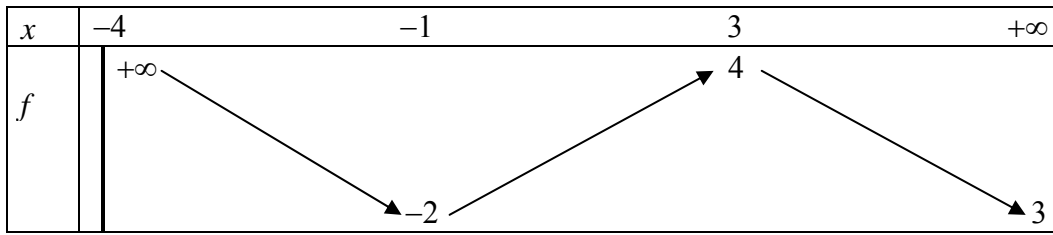


**:01** •

:  $] -4, +\infty[$   $f$



•  $f ( ]-4, +\infty[ )$   $f ( ]-4, 3[ )$   $f ( ]-4, -1[ )$   $f ( [-1, +\infty[ )$   $f ( [3, +\infty[ )$  **-(1)**

•  $x_B$   $x_A$   $x_A < x_B$   $B$   $A$   $(Ox)$   $(C_f)$  **-(2)**

•  $\lim_{x \rightarrow -4} f \circ f (x)$   $\lim_{x \rightarrow +\infty} f \circ f (x)$  : **-(3)**

**:02** •

:  $I$   $\mathbb{R}$   $(E)$

(4):  $\begin{cases} (E): \cos x = \frac{2}{3}x \\ I = ]\frac{\pi}{6}, \frac{\pi}{3}[ \end{cases}$  (3):  $\begin{cases} (E): x^3 + \sqrt{x+1} = 0 \\ I = ]-\frac{7}{8}, -\frac{3}{4}[ \end{cases}$  (2):  $\begin{cases} (E): x + \sin x = 1 \\ I = ]0, \frac{\pi}{6}[ \end{cases}$  (1):  $\begin{cases} (E): x^3 + 3x = 5 \\ I = ]1, \frac{5}{4}[ \end{cases}$

**:03** •

•  $f (x) = (1+x^3)^2$  :  $\mathbb{R}$   $f$

•  $J = ]-\infty, -1]$   $I = [-1, +\infty[$   $f$  **-(1)**

•  $\mathbb{R}_+$   $J$   $h$   $\mathbb{R}_+$   $I$   $g$   $h^{-1}$   $g^{-1}$  **-(2)**

**:04** •

•  $f (x) = \frac{1}{\sqrt{x^3+1}}$  :  $I = ]-1, +\infty[$   $f$

•  $\lim_{x \rightarrow -1^+} f (x)$   $\lim_{x \rightarrow +\infty} f (x)$   $I$   $f$  **-(1)**

•  $f$   $f^{-1}$   $J$   $I$   $f$  **-(2)**

**:05** •

:  $f^{-1}$   $J$   $I$   $f$

(4):  $\begin{cases} f (x) = x - \sqrt{4-x^2} \\ I = [-\sqrt{2}, 2] \end{cases}$  (3):  $\begin{cases} f (x) = -1 + \sqrt{1+x^2} \\ I = ]-\infty, 0] \end{cases}$  (2):  $\begin{cases} f (x) = x - 4\sqrt{x} \\ I = [4, +\infty[ \end{cases}$  (1):  $\begin{cases} f (x) = \frac{x^2}{x+1} \\ I = ]-1, 0] \end{cases}$

**:06** •

. (2) :  $\arctan 2 + \arctan 5 + \arctan 8 = \frac{5\pi}{4}$       (1) :  $\arctan\left(\frac{5}{2}\right) + \arctan\left(\frac{7}{3}\right) = \frac{3\pi}{4}$  :

.  $\arctan \frac{1}{3} + \arctan \frac{1}{5} + \arctan \frac{1}{7} + \arctan \frac{1}{8} = \pi$

**:07** •

(3) :  $\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \sqrt[4]{1 + \cos x}}{2x - \pi}$       (2) :  $\lim_{x \rightarrow +\infty} \frac{\sqrt[3]{x}}{\sqrt[3]{x} + \sqrt[3]{x^2}}$       (1) :  $\lim_{x \rightarrow -2} \frac{\sqrt[3]{2-3x} - 2}{x + 2}$

. (6) :  $\lim_{x \rightarrow +\infty} \sqrt[4]{x^3} (\sqrt[4]{x} - \sqrt[4]{x+2})$       (5) :  $\lim_{x \rightarrow +\infty} \frac{\sqrt{x} + \sqrt[3]{x} + \sqrt[4]{x}}{\sqrt[5]{x} + \sqrt[6]{x}}$       (4) :  $\lim_{x \rightarrow 1} \frac{\sqrt[3]{x} - 1}{\sqrt{x} + \sqrt[4]{x} - 2}$

. (9) :  $\lim_{x \rightarrow \pm\infty} x^5 \left( \frac{\pi}{4} - \arctan \frac{x}{1+x} \right)$       (8) :  $\lim_{x \rightarrow -\infty} \arctan \left( \frac{\sqrt{3x}}{\sqrt[3]{1-x^3}} \right)$       (7) :  $\lim_{x \rightarrow +\infty} x^2 \arctan \left( \frac{1}{x+1} \right)$

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