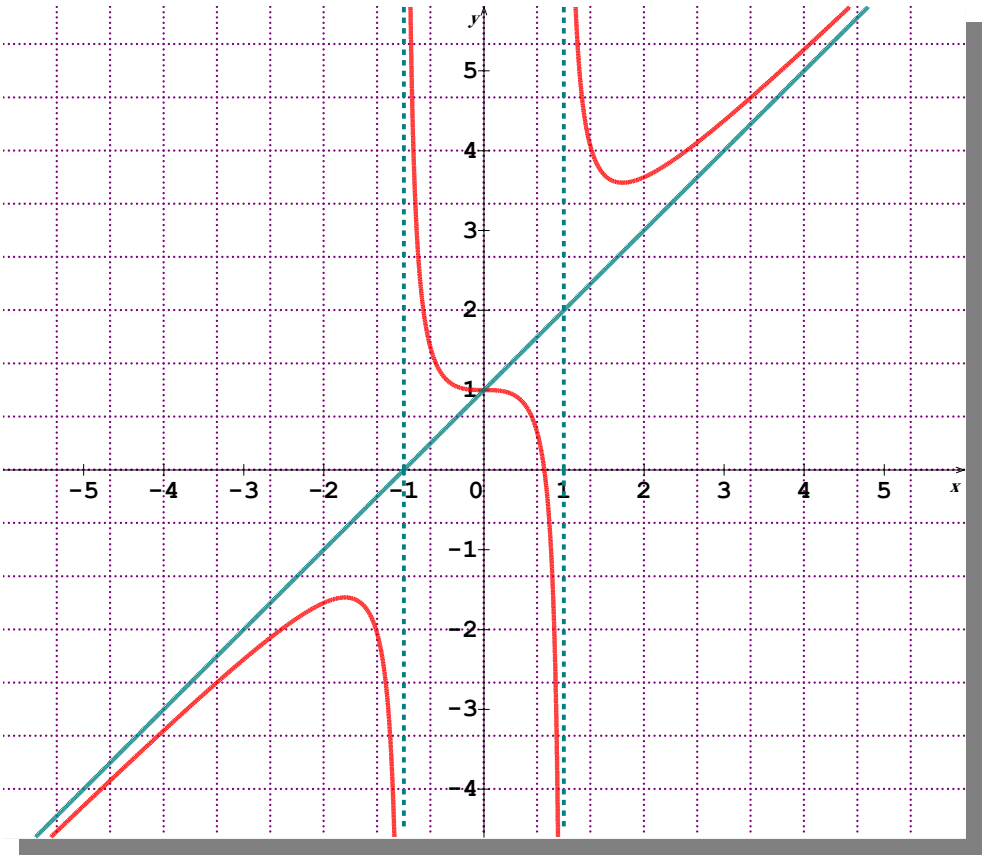
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قلم الجزائر

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2 ، 1

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01

f

1 $f(x)=x^3-3x+1$ $D_f=$

2 $f(x)=\dfrac{2x}{x^2+4}$ $D_f=$

3 $f(x)=\dfrac{-3x^2-4x+5}{(x-1)^2}$ $D_f=-\{1\}$

4 $f(x)=\dfrac{4x-8}{x^2-4x+3}$ $D_f=-\{1;3\}$

5 $f(x)=\dfrac{2x^3-2x^2}{(2x-1)^2}$ $D_f=-\left\{\dfrac{1}{2}\right\}$

6 $f(x)=x-\sqrt{x^2+1}$ $D_f=$

7 $f(x)=2x-3-\dfrac{x+1}{x^2-4}$ $D_f=-\{-2;2\}$

8 $f(x)=\dfrac{x}{\sqrt{x^2-1}}$ $D_f=]-\infty;-1[\cup]1;+\infty[$

02

I g $-\{1\}$ $f(x)=\dfrac{2x^2-5x+4}{x-1}$ (C_f)

1 a b c

$f(x)=ax+b+\dfrac{c}{x-1}$ $x\in-\{1\}$

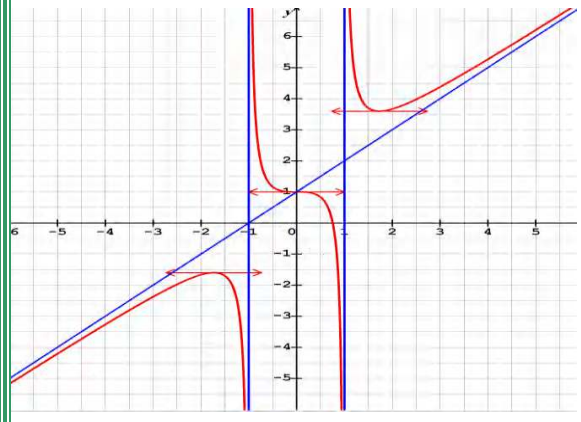
2

3 (C_f)

4 (C_f)

03

$f(x)=\dfrac{x^3+x^2-1}{x^2-1}$ $D=-\{-1;1\}$ f (C_f)



1

D

2

3 f $f'(x)$

4 $f(-x)+f(x)$

04

I

1 $\lim\limits_{x\to 1}\dfrac{x^2-3x+2}{x^3-1}$

2 $\lim\limits_{x\to+\infty}(x-\sqrt{x^2-1})$

3 $\lim\limits_{x\to 2}\dfrac{\sqrt{x-1}-1}{x-2}$

4 $\lim\limits_{x\to-\infty}(\sqrt{4x^2+4x+3}+(2x+1))$

II

$\lim_{x\to+\infty}(\sqrt{x^2+3}-x+2)=2$ **4** $\lim_{x\to1}\frac{\sqrt{x}-1}{x^2+x-2}=\frac{1}{6}$ **3** $\lim_{x\to0}\frac{\sin x}{\sqrt{x+1}-1}=2$ **2** $\lim_{x\to2}\frac{x^3-4x^2+5x-2}{x^2-x-2}=\frac{1}{3}$ **1**

05

$f(x)=\sqrt{x^2-2x}-2x+1$ $D=]-\infty;0]\cup[2;+\infty[$ f

$\lim_{x\to+\infty}f(x)=-\infty$ $\lim_{x\to-\infty}f(x)$ 1

$+\infty$ (C_f) $\lim_{x\to+\infty}[f(x)+x]$ 2

$\lim_{x\to-\infty}[f(x)-(-3x)]=2$ 3

06

$f(x)=\frac{2x-\sin x}{x+1}$ $D=]-1;+\infty[$ f

$\lim_{x\to+\infty}f(x)$ $\frac{2x-1}{x+1}\le f(x)\le\frac{2x+1}{x+1}$

$\lim_{x\to0}\frac{f(x)}{x}=1$ $\lim_{x\to0}\frac{\sin x}{x}=1$

f $\lim_{x\longrightarrow-1}f(x)=+\infty$

07

$\lim_{x\to-\infty}(3x+\sqrt{x^2+3x})$ $\sqrt{x^2+3x}<-x$ $x<0$ 1

$\lim_{x\to+\infty}(3x-\sqrt{x^2-2x+3})$ $>x+1>\sqrt{x^2-2x+3}$ $x>1$ 2

08

C_f $f(x)=\sqrt{x^2+5}$ f

$\frac{f(x)-f(2)}{x-2}=\frac{x+2}{\sqrt{x^2+5}+3}$ $x\in\ -\{2\}$ 1

f $\lim_{x\to2}\frac{f(x)-f(2)}{x-2}$ 2

$\lim_{x\to-\infty}\frac{\sqrt{x^2+5}-3}{x-2}=-1$ $\lim_{x\to+\infty}\frac{\sqrt{x^2+5}-3}{x-2}=1$ 3

$+\infty$ C_f $y=x$ 4

$-\infty$ C_f f 5

09

$f(x)=x^3-3x+1$ f

، f 1

2

f(x) $f(x)=0$

0,1 α $\alpha\in]-1;1[$ $f(x)=0$

$]2;3[$ $f(x)=0$

10

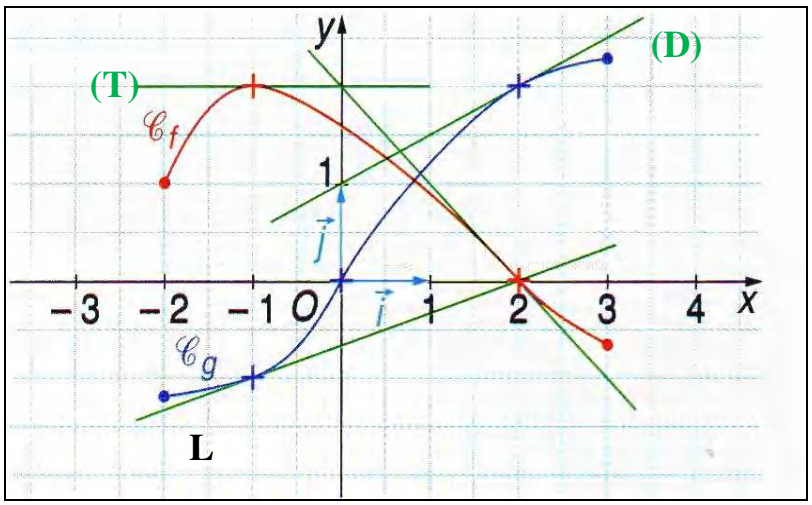
a f

$a=2$ $f(x)=\sqrt{4-x^2}$ 3 $a=1$ $f(x)=x^2|x-1|$ 2 $a=-1$ $f(x)=x^2-3x$ 1

11

(C_g) (C_f)

$[-2;3]$ g f



1

$(g)'(2)$ $(f)'(2)$ * $(g)'(-1)$ * $(f)'(-1)$ *

$h(x)=f(2x-1)$ $[-2;3]$ x 2

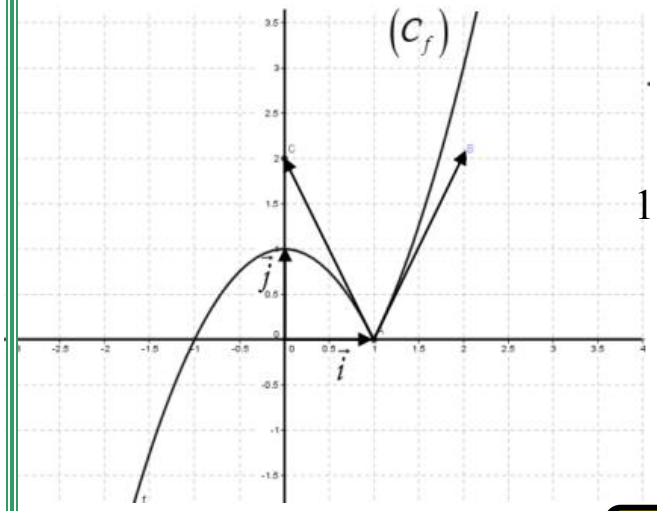
$[-2;3]$ h

L D T $h'(2)$ $h'(0)$

12

f

(C_f) $f(x)=|x-1|(x+1)$



1 f (C_f) 1

2

m 3

$f(x)+m^2=f(0)$

13

g (C_g)

$C(1;0)$ $B(0;1)$ $A(-1;0)$ (C_g)

1 I

$g'(1)$ $g'(0)$ $g'(-1)$ $g(1)$ $g(0)$ $g(-1)$

B A 2

$g(x)=0$ $[-2;2]$ 3

$g'(x)\le 0$ $g'(x)=-1$

$g(x)=ax^3+bx^2+cx+1$ II

c b a

1 I

14

(C_f) $\begin{cases} f(x)=\dfrac{2x^2-\alpha+3}{x} : x\le 2 \\ f(x)=x^2+2x-\alpha : x \quad 2 \end{cases}$ * f

2 f α 1

$\alpha=19$ 2

f

$(-\infty)$ (Δ) (C_f)

2 (T)

(C_f)

15

(C_f) $\begin{cases} f(x)=\dfrac{4x-4}{x^2+2x-3} : x<1 \\ f(x)=\sqrt{x^2+3}+\alpha x : x\geq 1 \end{cases}$ f

$\lim\limits_{x \xrightarrow{<} 1} f(x) = \lim\limits_{x \xrightarrow{>} 1} f(x)$ α 1

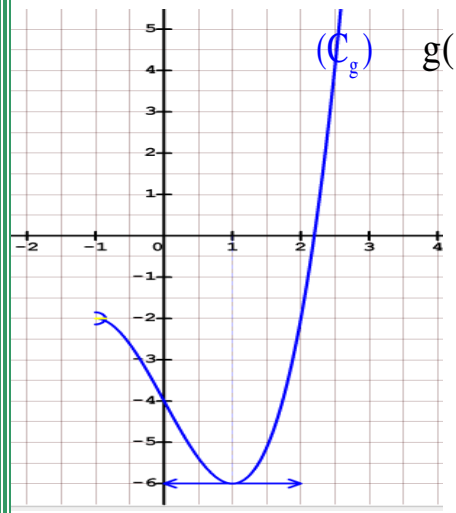
$\alpha = -1$ 2

$\lim\limits_{x \to -\infty} f(x)$ $\lim\limits_{x \to +\infty} f(x)$

$\lim\limits_{h \xrightarrow{<} 0} \dfrac{f(h-1)-f(1)}{h}$ $\lim\limits_{h \xrightarrow{>} 0} \dfrac{f(h-1)-f(1)}{h}$

1

16



(C_g) $g(x)=ax^3+bx+c$ $]-1;+\infty[$ g (C_g)

1

c b a $g'(1)$ $g(1)$ $g(0)$

g

$\alpha \in]2;2,25[$ $x^3-3x-4=0$ 3

17

$g(x)$

$D = \quad -\{1\}$ f

x	$-\infty$	1	1	3	$+\infty$
f(x)	$-\infty$ ↗	2	↘ $-\infty$	$+\infty$	↘ 6 ↗ $+\infty$

D $f(x)$ $f'(x)$ f 1

$k(x)=f(-2x)$ $h(x)=f(\dfrac{1}{x})$ $g(x)=f(x^2)$ k h g 2

k h g

$V(x)=\dfrac{1}{f(x)}$ $E(x)=[f(x)]^3$ $R(x)=[f(x)]^2$ V E R 3

$f'(x)$ $f(x)$ $V'(x)$ $E'(x)$ $R'(x)$

V E R

18

$]2;+\infty[$ $]-\infty;2[$ f

x	$-\infty$	0	2	3	$+\infty$
f(x)	4 ↘		1 ↗	$+\infty$ ↘	0 ↘ -2

(C)

∞ $f\left(\frac{1}{x}\right)$ f 1

$[0;2[$ $f(x)=2$

$g(2)=0$ $g(x)=\frac{1}{f(x)};x\neq 2$ $-\{3\}$ g 2

g 3 $-\infty$ $+\infty$ g

19

(C_f) $-\{1\}$ f

x	$-\infty$	α	1	2	5	$+\infty$
f'(x)					0	
f(x)	2021 ↘		0 ↘ $-\infty$	$+\infty$ ↘	0 ↘ -3 ↗	1442

(C_f) f 1

f 2

$f(x)$ $f(x)=0$ 3

$g(x)=\sqrt{f(x)}$ $]-\infty;\alpha]\cup]1;2]$ g 4

g

g D_g g f

20

4cm (O,i,j)

(C_f) $f(x)=x\sqrt{1-x^2}$ $[-1;1]$ f

f 1

$\lim_{x \longrightarrow -1} \frac{f(x)}{x+1}$ $\lim_{x \longrightarrow 1} \frac{f(x)}{x-1}$ 2

f 3

(C_f) (T) 4

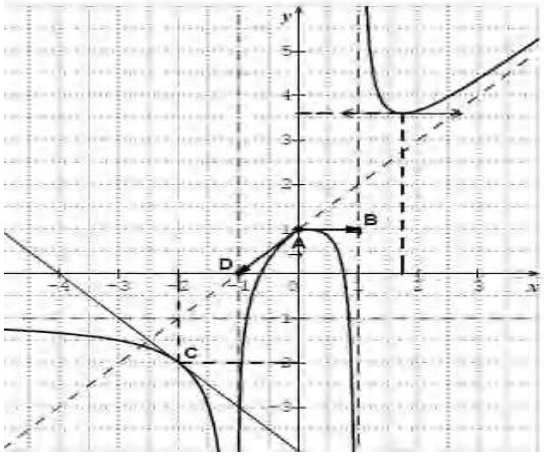
(C_f) (T)

(C_f) (T) 5

21

f (C_f)

1



f f D_f

$\lim_{x \to +\infty}(f(x) - x = 1$ 2

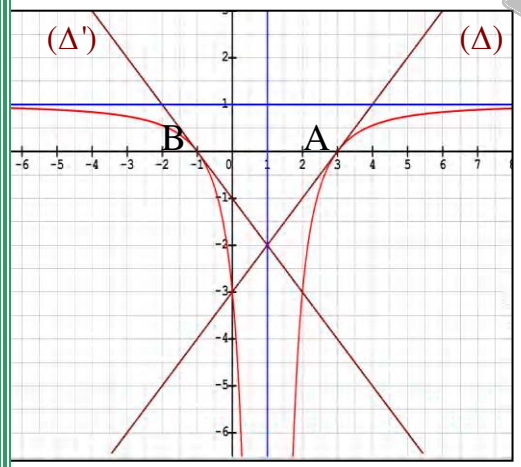
f '(0) f '(0) f '(−2) f(0) 3

0 f

$f'(x) \geq 0$ $f(x) = 0$ 4

$f(x) - x = m$ m 5

22



$-\{1\}$ f (C_f)

B(−1;0) A(3;0) (C_f) (Δ') (Δ)

f 1

$f'(x)$ $f(x)$

f

(Δ') (Δ) $f'(-1)$ $f'(3)$

b a 1 $f(x) = \frac{x^2 - ax + b}{(x-1)^2}$ 2

$h(x) = [f(x)]^2$ h 3

$h'(x)$ $f'(x)$ $f(x)$ $h'(x)$

h

23

(C_f) $f(x)=\dfrac{x^2+\alpha x+\beta}{x+2}$ $-\{-2\}$ f

$\dfrac{2}{3}$ $A(1;-3)$ (C_f) β α 1

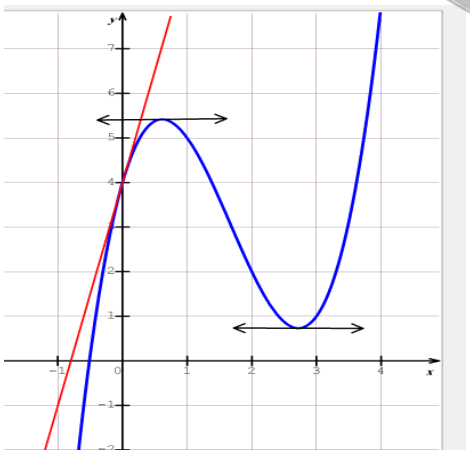
$\beta=-7$ $\alpha=-3$ 2

$y=x-1$ (C_f)

$4y-x=0$ (C_f)

(C_f)

24



$g(x)=x^3-5x^2+5x+4$ f I

(C_g)

$A(0;4)$ (T)

g(x) 1

(T) (C_g)

g 2

g $g'(x)$ x

10^{-1} α $]-1;0[$ α $g(x)=0$ 3

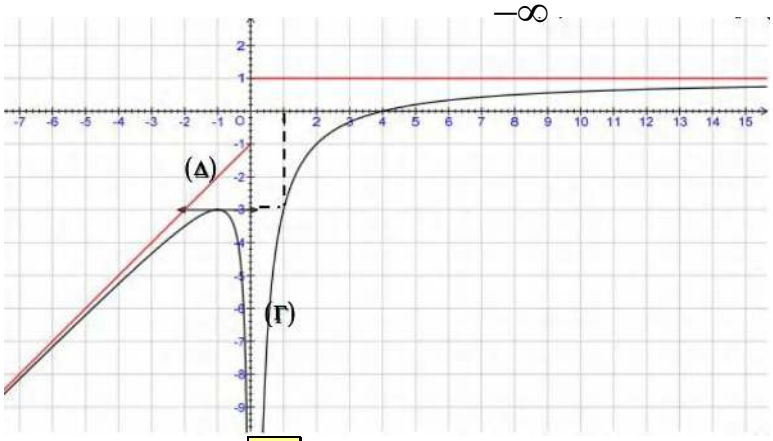
g(x) x

(T) (C_8) (T) 4

25

(Γ) * f (Γ)

y=1 x=0 $-\infty$



$\lim_{x\to+\infty}[fof(x)-f(x)]$ $\lim_{|x|\to 0} f(x)$ $\lim_{x\to+\infty}[f(x)-x]$ $\lim_{x\to+\infty}\frac{f(x)}{x}$ $\lim_{x\to-\infty} f(x)$ $\lim_{x\to+\infty} f(x)$ 1

f 2

$f(x)=-3$ $f(x)=-1$ 3

$f(]0;4])$ $f(]-\infty;0[)$ $f(]0;+\infty[)$ 4

$g(x)=\frac{\sqrt{1+x^2}}{x+3}$ $-\{-3\}$ g

x	$-\infty$	-3	$\frac{1}{3}$	$+\infty$
g'(x)	-	-	0	+
g	↘	↘	↗	

1

2cm g 2

$h(x)=(fog)(x)$ h 3

$-\{-3\}$ h

$\lim_{x\to-3^{>}} h(x)$ $\lim_{x\to-3^{<}} h(x)$ $\lim_{x\to-\infty} h(x)$

26

d c b a $f(x)=\frac{x^2+ax+b}{cx^2+dx-2}$ f

(C_f)

(C_f) d c b a I

$x=2$

5 $A(1;-2)$

$f(x)=\frac{x^2+x}{x-2}$ $-\{2\}$ x II

f 1

$\lim_{x\to+\infty}[f(x)-x-3]$

f $f'(x)$ $-\{2\}$ x 2

$f(x)+f(4-x)=10$ $x\in$ $-\{2\}$ 3

(C_f)

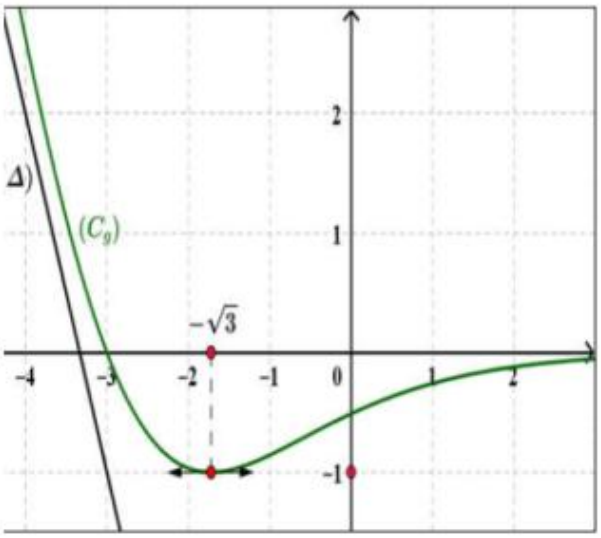
$x^2 = (m-1)x - 2m$ m

27

g (C_g)

$-\infty$ (C_g) (Δ)

$+\infty$ (C_g)



1

$g'(-\sqrt{3})$ $g(-\sqrt{3})$ $g(-3)$

$\lim_{x\to-\infty}[g(x)+3x]$ $\lim_{x\to+\infty}\frac{g(x)}{x}$ $\lim_{x\to+\infty} g(x)$ $\lim_{x\to-\infty} g(x)$

f f 2

(C_f) $f'(x) = g(x)$

$f'(x) = g(x)$

(C_f)



2014 28

$g(x) = 2x^3 - 4x^2 + 7x - 4$ g I

$\lim_{x\to+\infty} g(x)$ $\lim_{x\to-\infty} g(x)$ 1

g

$0,7$ α $0,8$ α $g(x) = 0$ 2

$g(x)$ x

$f(x) = \dfrac{x^3 - 2x + 1}{2x^2 - 2x + 1}$ f II

(O, i, j) (C_f)

$\lim_{x\to+\infty} f(x)$ $\lim_{x\to-\infty} f(x)$ 1

$f(x) = \dfrac{1}{2}(x+1) + \dfrac{1-3x}{2(2x^2-2x+1)}$ x 2

(Δ) (C_f)

(Δ) (C_f)

f f' $f'(x) = \dfrac{x.g(x)}{(2x^2-2x+1)^2}$ x 3

$f(\alpha) \approx -0,1$ f x $f'(x)$

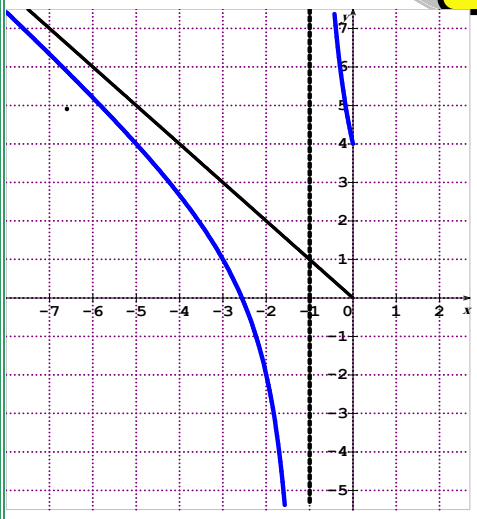
(C_f) (Δ) 5 $f(x) = 0$ $f(1)$ 4

(C_h) $h(x) = \dfrac{x^3 - 4x^2 + 2x - 1}{2x^2 - 2x + 1}$ h 6

$h(x) = f(x) - 2$ x

(C_h) (C_f) (C_h)

2009 29



$I=]-\infty;-1[\cup]-1;0[$ f I

(C_f) $f(x)=-x+\dfrac{4}{x+1}$

$(O;i;j)$

I f 1

f

(C_g) $g(x)=x+\dfrac{4}{x+1}$ $[0;+\infty[$ g 2

$+\infty$ g

$+\infty$ (Δ) (C_g)

g

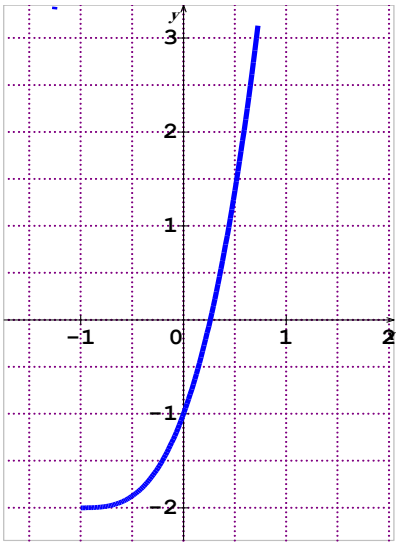
$k(x)=|x|+\dfrac{4}{x+1}$ $-\{-1\}$ k II

$\lim\limits_{h\longrightarrow 0}\dfrac{k(h)-k(0)}{h}$ $\lim\limits_{h\longrightarrow 0}\dfrac{k(h)-k(0)}{h}$ 1

$x_0=0$ (Δ_2) (Δ_1) 2

(C_k) (Δ_2) (Δ_1) 3

2008 30



g C)

$g(x)=x^3+3x^2+3x-1$ $I=]-1;+\infty[$

$g(0,5)$ $g(0)$ g 1

$g(\alpha)=0$ $\alpha\in]0;0,5[$

I g(x)

(Γ) $f(x)=\dfrac{x^3+3x^2+3x+2}{(x+1)^2}$ $]-1;+\infty[$ f 2

$f'(x)=\dfrac{g(x)}{(x+1)^3}$ $x\in I$

$\lim\limits_{x\to\alpha}\dfrac{f(x)-f(\alpha)}{x-\alpha}$

f $\lim\limits_{x\to+\infty}[f(x)-(x+1)]$ $\lim\limits_{x\longrightarrow -1}f(x)$

(Γ) 10^{-2} $f(\alpha)$ $\alpha=0,26$ 3

2017 31

$g(x)=x^3+6x+12$ g I

g 1

$]-1,48;-1,47[$ α $g(x)=0$ 2

g(x) x

$f(x)=\dfrac{x^3-6}{x^2+2}$ f II

(O,i,j) (C_f)

$\lim\limits_{x\to+\infty} f(x)$ $\lim\limits_{x\to-\infty} f(x)$ 1

$f'(x)=\dfrac{x.g(x)}{(x^2+2)^2}$ x

f

(C_f). $y=x$ (Δ) 2

(Δ) (C_f)

$f(\alpha)$ $f(\alpha)=\dfrac{3}{2}\alpha$ 3

(C_f) (Δ) 4

2009 32

f (C_f) $f(x)=x-\dfrac{2}{\sqrt{x+1}}$ $]-1;+\infty[$ f

f 1

$y=x$ (D) (C_f) 2

(D) (C_f)

$1,3$ x_0 $1,4$ x_0 (C_f) 3

(C_f) (C_f) (Δ)

(C_f) (Δ)

g (C_g) $g(x)=|f(x)|$ $]-1;+\infty[$ g 4

(C_f) (C_g)

$g(x)=m^2$ m

2008 33

(C_f) $f(x)=x\left(1+\frac{1}{\sqrt{x^2+1}}\right)$ f

f 1

$f'(x)=1+\frac{1}{(x^2+1)\sqrt{x^2+1}}$ $x\in$ 2

f 3

0 (C_f) (T) 4

(C_f) (T) (C_f) 5

∞ (C_f) y=x+1 (D) 6

(D')

(C_f) (D') (D) 7

$g(x)=|x|\left(1+\frac{1}{\sqrt{x^2+1}}\right)$ g 8

(C_g) (C_f) g

1980 34

$f(x)=\frac{x^2-2x-15}{x^2-2x-3}$ $-\{-1;3\}$ f

$(O;i;j)$ f $\mathcal{C}$

$\mathcal{C}$ f 1

5 $\mathcal{C}$ 2

$\mathcal{C}$ $\mathcal{C}$ $x=1$ 3

m $f_m(x)=\frac{x^2-mx-15}{x^2-mx-3}$ f_m 4

$\mathcal{C}_m$ f_m

$\mathcal{C}_m$

$(4;1)$

1997 35

$f(x)=\frac{4x^2-5x}{2x^2-5x+2}$ $-\left\{\frac{1}{2};2\right\}$ f

(C_f)

c b a 1

$$f(x)=a+\frac{b}{2x-1}+\frac{b}{x-2} \qquad x\in -\left\{\frac{1}{2};2\right\}$$

$\mathcal{C}_f$ f 3

0 (C_f) 4

6 (C_f) 5

1997 36

$$f(x)=2x+3-\frac{1}{(x+1)^2} \qquad -\{-1\} \qquad f \qquad 1$$

$(O;i;j)$ C

$$f'(x)=\frac{2(x+2)(x^2+x+1)}{(x+1)^3} \qquad x\in -\{-1\} \qquad 1$$

C 3 f 2

$x_0\in]-0,37;-0,25[$ C 4

0 C 5

C 6

x m $2x^3+(7-m)x^2+2(4-m)x+2-m=0....(e)$ 7

$f(x)=m$ (e) x

(e) m C

1997 37

$$f(x)=\frac{x^2(x+2)}{(x+1)^2} \qquad -\{-1\} \qquad f$$

$(O;i;j)$ (C_f)

$-\{-1\}$ x γ,β α 1

$$f(x)=\alpha x+\frac{\beta}{(x+1)}+\frac{\gamma}{(x+1)^2}$$

(C_f) 3 f 2

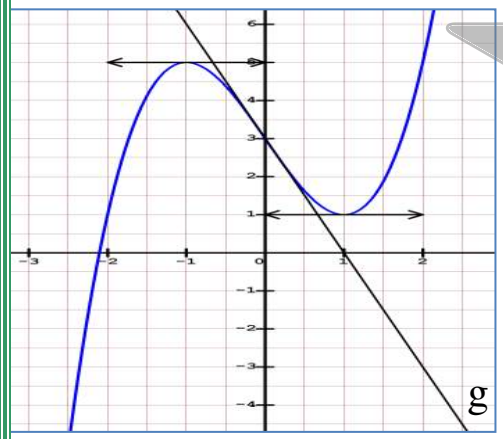
(C_f)

(C_f)

1 (C_f) (Δ) 4

(C_f) 5

38



g (C_g) I

(Δ) $g(x)=x^3+ax+b$

$A(0;3)$ (C_g)

1

g $g''(0)$ $g'(0)$ $g(1)$ $g(-1)$

$b=3$ $a=-3$ $g'(x)$ 2

$g(x)$ $]-2,2;-2,1[$ α $g(x)=0$ 3

$f(x)=x^4-6x^2+12x$ f II

$f'(x)=4g(x)$ x 1

f

$f(\alpha)$ $f(\alpha)=-3\alpha(\alpha-3)$ 2

(C_k) $k(x)=f(-|x|)$ k III

k **1**

0 k 3 k **2**

39

f

x	$-\infty$	2	1	0	$+\infty$
f'(x)	0			0	
f(x)	$-\infty$ ↗	2	↘	2 ↗	$+\infty$

c b a $f(x)=ax+b+\dfrac{c}{x+1}$

f **2** c a f'(x) **1**

c b a

$\lim\limits_{x\longrightarrow -1} f(x)$ $\lim\limits_{x\longrightarrow -1} f(x)$

f $\frac{3}{4}$ $\frac{1}{2}$

(C_f) $a=b=c=1$ 3

$y=x+1$ (Δ) (C_f) $(+\infty)$ $(-\infty)$ x

(Δ) (C_f)

(C_f) $\omega(-1;0)$

(C_f) (C_f)

$f(x)=m+2$ m

40

C b a $g(x)=ax+b-\frac{1}{x-3}$ $-\{3\}$ g I

b a 1

A(2 ;1) C

C I(3 ; 3a + b) 2

$f(x)=\frac{-x^2+5x-7}{x-3}$ $R-\{3\}$ f II

$(O;i;j)$ (C_f)

$f(x)=g(x)$ $R-\{3\}$ x 1

$\lim\limits_{x\to\pm\infty}[f(x)-(-x+2)]$ 3 f 2

(Δ) (C_f) 4

3 (C_f) 5

(C_f) (Δ) 6

f(x)=3x+m m (C_f) 7

41

$f(x)=|x|+\sqrt{x^2-1}$ $]-\infty;-1]\cup[1;+\infty[$ f

$(O;i;j)$ (C)

$+\infty$ f f 1

$\lim\limits_{x\to+\infty}[f(x)-2x]=0$ 2

1 f 3

$]-\infty;-1]$ $[1;+\infty[$ f 4

1 α 2 α $2y=5$ (C) 5

(C) 6

42

$(O;i;j)$ (C_f) $f(x)=-x+\dfrac{x-2}{x^2+1}$ f

$\lim\limits_{x\to+\infty} f(x)$ $\lim\limits_{x\to-\infty} f(x)$ 1

$f'(x)=\dfrac{-x(x-1)(x^2+x+4)}{(x^2+1)^2}$ f 2

f 3

(D) (C_f) (C_f) $(D):y=-x$ 4

$f(-1.25)$ 1 (C_f) 5

(C_f) (D) 6

(C_f) (C_g) (C_g) g 7

(C_g) $g(x)$ $v\begin{pmatrix}-1\\1\end{pmatrix}$

43

(C_f) $f(x)=\dfrac{ax^2+bx+c}{x-2}$ $-\{2\}$ f

$y=x-3$ (C_f) c b a I

3

$c=7$ $b=-5$ $a=1$ II

f 1

3 (D_2) (D_1) (C_f) 2

(D_2) (D_1)

(C_f) (D_2) (D_1) 3

$f(x)+3x-m=0$ m 4

$g(x)=f(|x|)$ $-\{-2;2\}$ f 5

0 g

(C_g) (C_f) g (C_g)

44

(C_g) $g(x)=x^3-3x-3$ g I

g 1

$g(x)$ $]2,1;2,2[$ α $g(x)=0$ 2

$g(-x)+g(x)$ x 3

(C_f) $f(x)=\dfrac{2x^3+3}{x^2-1}$ $-\{-1;+1\}$ f II

$f'(x)=\dfrac{2x.g(x)}{(x^2-1)^2}$ $-\{-1;+1\}$ x 1

$f(\alpha)$ $f(\alpha)=3\alpha$ 3 f 2

(C_f) $y=2x$ (Δ) 4

(Δ) (C_f)

(Δ) (C_f) 5

(C_f) 6

m 7

$2x^3-mx^2+m+3=0$

$h(x)=\dfrac{2|x|^3+3}{x^2-1}$ $-\{-1;+1\}$ h III

h 1

(C_f) (C_h) 2

45

(C_f) $f(x)=|x+1|+\dfrac{x}{x^2-1}$ $-\{-1;1\}$ f

1

$f(x)$

f $f'(x)$ 2

(C_f) $(\Delta'):y=-x-1$ $(\Delta):y=x+1$ 3

(Δ') (Δ) (C_f)

(C_f)

$]-2;-1,5[$ β $]0,5;1[$ α

(C_f)

m $y = mx + 1$ (D_m) 4

(D_m) m

$|x+1| + \dfrac{x}{x^2-1} - mx = 1$ m

46

$(O\ ;\ i\ ,j)$ (C_f) $f(x) = \sqrt{x^2+1} - x$ f

$\lim\limits_{x\to+\infty} f(x) = 0$ $\lim\limits_{x\to-\infty} f(x)$ 1

$f'(x) = \dfrac{x - \sqrt{x^2+1}}{\sqrt{x^2+1}}$ x 2

$f'(x)$ 0 x

f 3

$\lim\limits_{x\to-\infty}(f(x) + 2x) = 0$

(C_f) (C_f) 4

47

(C_g) $g(x) = ax^3 - 3x + b$ $[-1;+\infty[$ g (**I**

1 $y = -6$ (C_g) b a 1

g g 2

g(x) $\alpha \in]2;2,25[$ $x^3 - 3x - 4 = 0$ 3

(C_f) $f(x) = \dfrac{x^2(x+2)}{x^2-1}$ $]-1;1[\cup]1,+\infty[$ f **II**

f 1

$f'(x)$ $]-1;1[\cup]1,+\infty[$ f 2

f $f'(x) = \dfrac{x.g(x)}{(x^2-1)^2}$

$f(\alpha)$ $f(\alpha) = \dfrac{3}{2}\alpha + 2$ 3

(Δ) (C_f) $\lim\limits_{x\to\pm\infty}(f(x) - (x+2))$ 5

(Δ) (C_f) 6

(C_f) (Δ) 7

48

b a $f(x)=\dfrac{(x+a)^2}{x^2+b}$ f

(O,i,j) (C_f)

$y=2x+1$ 0 (Δ) b a 1

f $y=1$ 2

$f'(x)=\dfrac{-2(x^2-1)}{(x^2+1)^2}$ x $a=b=1$ 3

f

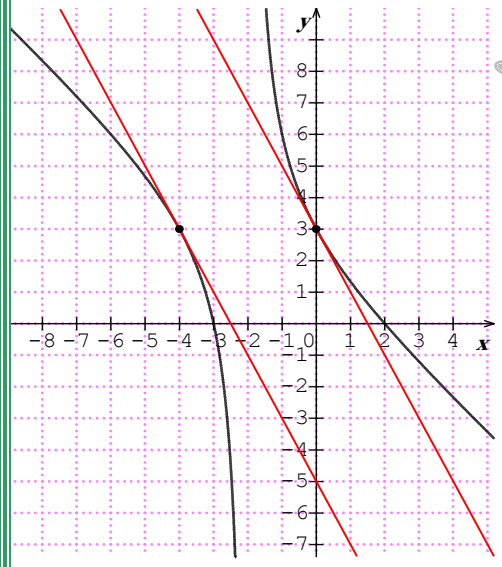
A(0,1) (Δ) f

(C_f) A(0,1)

(Δ) (C_f)

$g(x)=f\left(\dfrac{1}{x}\right)$ g 4

f g



49

$f(x)=ax+b+\dfrac{c}{x+2}$ $-\{-2\}$ f

c b a

f C_f (o,i,j)

-4 0 C_f (Δ') (Δ)

(Δ') (Δ) $f'(-4)$ $f'(0)$ -1

$f(x)+2x=m-1$ m -2

f -3

$g(x)=\sqrt{f(x)}$ g -4

g (C_f)

g

c b a -5

m $f_m(x)=\dfrac{x^2-mx}{x-1}$ $-\{1\}$ f_m

(O,i,j) f_m (C_m)

$(m\neq -1$ (C_m) 1

(C_m) 2

$(m\neq -1$ $f_m(x)=ax+b+\dfrac{c}{x-1}$ c b a 3

(C_m) $\omega_m(1;m+2)$ 4

$-\{-1\}$ m ω_m

f_m $f'_m(x)$ 5

f_m m

f_m m

تمنياتنا لكم بالتوفيق التام في بكالوريا 2021

BEY MATHS

