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بوزريعة: شوال 1431 هـ

دراسة الدوال

Etude de fonctions

ادرس تغيرات كل دالة من الدوال التالية ، ثم ارسم تمثيلها البياني في مستوٍ مزود بمعلم متعامد ومتجانس.

(1 $\Re \qquad f(x)=\dfrac{2x}{x^2+1}$

(2 $\Re-\{-1,3\} \qquad f(x)=\dfrac{x^2-2x-15}{x^2-2x-3}$

(3 $\Re-\{0\} \qquad f(x)=x+1-\dfrac{2}{x}$

(4 $\Re-\{0\} \qquad f(x)=\dfrac{x^2+2x-1}{x^2}$

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

(6 $\Re-\{1\} \qquad f(x)=x-3+\dfrac{1}{x-1}$

(7 $\Re-\{-1\} \qquad f(x)=\dfrac{2x^2+4x}{(x+1)^2}$

(8 $\Re-\{-1,3\} \qquad f(x)=\dfrac{2x-7}{x^2-2x-3}$

(9 $\Re-\left\{\dfrac{1}{2},2\right\} \qquad f(x)=\dfrac{4x^2-5x}{2x^2-5x+2}$

(10 $\Re-\{-1\} \qquad f(x)=-x+2-\dfrac{2}{x+1}$

(11 $\Re-\{0\} \qquad f(x)=-2x+2-\dfrac{1}{x^2}$

(12 $\Re-\{2\} \qquad f(x)=2x+1-\dfrac{1}{(x-2)^2}$

(13 $\Re-\{0\} \qquad f(x)=x^2-1-\dfrac{2}{x}$

(14 $\Re-\left\{\dfrac{1}{2}\right\} \qquad f(x)=\dfrac{2x^3-2x^2}{(2x-1)^2}$

(15 $]-\infty,2] \qquad f(x)=\sqrt{-2x+4}$

(16 $\Re \qquad f(x)=\dfrac{x-1}{\sqrt{x^2+1}}$

(17 $]-\infty,-1[\cup]1,+\infty[\qquad f(x)=\dfrac{x}{\sqrt{x^2-1}}$

(18 $[-4,+\infty[\qquad f(x)=(x+1)\sqrt{x+4}$

(19 $[-2\,,\,2] \qquad f(x)=\sqrt{-x^2+4}$

(20 $\Re \qquad f(x)=\sqrt{x^2-4x+5}$

(21 $x\geq\dfrac{3}{2}$ و $x\leq-\dfrac{1}{2} \qquad f(x)=\sqrt{4x^2-4x-3}$

(22 $]-\infty,0]\cup]2,+\infty[\qquad f(x)=\sqrt{\dfrac{x}{x-2}}-2$

(23 $x\geq\sqrt{2}$ و $x\leq-\sqrt{2} \qquad f(x)=\sqrt{x^2-2}-x$

(24
$$f(x)=\begin{cases}x^3-3x &]-\infty,0[\\ \dfrac{-2x^2+4x}{(x-1)^2} & [0,1[\cup]1,+\infty[\end{cases}$$

(25 $\Re-\{-3\} \qquad f(x)=|x-1|-\dfrac{4}{x+3}$

(26 $\Re-\{0\} \qquad f(x)=\dfrac{x^2+|2x-1|}{x}$

(27 $\Re \qquad f(x)=\sin^2 x-\sin x$

(28 $\Re \qquad f(x)=\sin 2x+2\sin x$

(29 $-\pi<x<\pi \qquad f(x)=\dfrac{1}{(1+\cos x)^2}$