

$$\bullet\bullet\circ \quad 110 \quad f(x) = \frac{|x|-1}{x^3-3x^2-4x}$$

$$\bullet\bullet\circ \quad 111 \quad f(x) = \frac{|x+1|}{x^3-3x^2-4x}$$

$$\bullet\bullet\circ \quad 112 \quad f(x) = \log \frac{|x-1|}{x^2+1}$$

$$\bullet\bullet\circ \quad 113 \quad f(x) = \frac{\sin^2 x}{|\cos x - 1|}$$

$$\bullet\bullet\circ \quad 114 \quad f(x) = \frac{\sin x}{|2x^2 - \pi x|}$$

$$\bullet\bullet\circ \quad 115 \quad f(x) = \arctan(\ln |x|)$$

$$\bullet\bullet\circ \quad 116 \quad f(x) = \frac{1}{1 - \ln |\sin x|}$$

## 2. Punti singolari e loro classificazione

$[x = 0, x = 4: \text{seconda specie}; x = -1: \text{eliminabile}]$

$[x = 0, x = 4: \text{seconda specie}; x = -1: \text{salto}]$

$[x = 1: \text{seconda specie}]$

$[x = 2k\pi: \text{eliminabili}]$

$\left[ x = 0: \text{salto}; x = \frac{\pi}{2}: \text{seconda specie} \right]$

$[x = 0: \text{eliminabile}]$

$[x = k\pi: \text{eliminabili}]$