# Discontinuità eliminabili

## Periodo 3 - UdA 4

Rappresentare graficamente le seguenti funzioni

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

[2] $f(x) = \frac{-x^3+3x^2}{-x^2-x}$

[3] $f(x) = \frac{-x^2-4x-4}{x^2+x-2}$

[4] $f(x) = \frac{-6x^2+6}{-x^2-2x+3}$

[5] $f(x) = \frac{-x^3-4x^2-4x}{x^2-2x}$

[6] $f(x) = \frac{5x^3+15x^2}{-x^2-x+6}$

[7] $f(x) = \frac{-x^2+2x}{x^4+4x^3}$

[8] $f(x) = \frac{-x^2+9}{x^2+6x+9}$

[9] $f(x) = \frac{-2x^3+14x-12}{-x^2+2x}$

# SOLUZIONI

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1. $\lim\limits_{x\to -3^{\mp}} f(x) = \pm\infty \quad f(-1) = 0 \quad f(0) = 1 \quad \lim\limits_{x\to 1^{\mp}} f(x) = \pm\infty \quad f(3) = 0 \quad \lim\limits_{x\to\infty} f(x) = 1$

2. $\lim\limits_{x\to -1^{\pm}} f(x) = \pm\infty \quad \lim\limits_{x\to 0} f(x) = 0 \quad f(3) = 0 \quad \lim\limits_{x\to\pm\infty} f(x) = \pm\infty$

3. $\lim\limits_{x\to -2} f(x) = 0 \quad f(0) = 2 \quad \lim\limits_{x\to 1^{\mp}} f(x) = \pm\infty \quad \lim\limits_{x\to\infty} f(x) = -1$

4. $\lim\limits_{x\to -3^{\mp}} f(x) = \pm\infty \quad f(-1) = 0 \quad f(0) = 2 \quad \lim\limits_{x\to 1} f(x) = 3 \quad \lim\limits_{x\to\infty} f(x) = 6$

5. $f(-2) = 0 \quad \lim\limits_{x\to 0} f(x) = 2 \quad \lim\limits_{x\to 2^{\mp}} f(x) = \pm\infty \quad \lim\limits_{x\to\mp\infty} f(x) = \pm\infty$

6. $\lim\limits_{x\to -3} f(x) = 9 \quad f(0) = 0 \quad \lim\limits_{x\to 2^{\mp}} f(x) = \pm\infty \quad \lim\limits_{x\to\mp\infty} f(x) = \pm\infty$

7. $\lim\limits_{x\to -4^{\pm}} f(x) = \pm\infty \quad \lim\limits_{x\to 0} f(x) = +\infty \quad f(2) = 0 \quad \lim\limits_{x\to\infty} f(x) = 0$

8. $\lim\limits_{x\to -3^{\pm}} f(x) = \pm\infty \quad f(0) = 1 \quad f(3) = 0 \quad \lim\limits_{x\to\infty} f(x) = -1$

9. $f(-3) = 0 \quad \lim\limits_{x\to 0^{\mp}} f(x) = \pm\infty \quad f(1) = 0 \quad \lim\limits_{x\to 2} f(x) = 5 \quad \lim\limits_{x\to\pm\infty} f(x) = \pm\infty$