

Studiare le seguenti funzioni

$$1. \ f(x) = \sqrt{x^2 - 9}$$

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

$$3. \ f(x) = \frac{x^3 + x^2}{x^2 + 6x + 3}$$

$$4. \ f(x) = \frac{\sin x + 2x}{x}$$

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

$$6. \ f(x) = \sqrt{x^3 - x^2 + x} - \sqrt{2x^2 - 7x + 6}$$

$$7. \ f(x) = \frac{x^3 - 27}{x^3 - 3x^2 + x^2 - 9}$$

$$8. \ f(x) = \frac{x^2 - 16}{x^2 - 3x - 16}$$

$$9. \ f(x) = \frac{2x \ln x + 3x}{4x}$$

$$10. \ f(x) = \frac{x \ln x + x}{2x}$$

$$11. \ f(x) = e^{2x-x^2+2}$$

$$12. \ f(x) = e^{\frac{3x}{2x+6}}$$