

XIV Sketch the graph

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

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

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

4) $y = \frac{x^2+1}{x^2-2}$

Also for the functions above find the domain. Label

1) HA, VA 2) relative extrema

3) points of inflection

XV Differentiate

1) $y = x^2 \ln(2x+3)$

2) $y = \frac{1+\ln x}{x}$

3) $y = \ln\left(\frac{t^2+3}{\sqrt{1-t}}\right)$

4) $y = \ln(x^3 \sqrt{x+1})$

5) $y = \ln\left(\frac{3x+2}{x^2-5}\right)^{1/4}$

6) $y = \ln[t^3(t^2-1)]$

7) $y = 4xe^x$

8) $y = \frac{x}{1+e^{2x}}$

9) $y = e^{\sqrt{x^2-9}}$

10) $y = e^3 + e^{2x}$

11) $y = \frac{2}{e^{2x}} + \frac{e^{2x}}{2}$

12) $y = 1 - 2e^{-x^3}$