# OBLIQUE ASYMPTOTES

For each of the following functions find the oblique asymptote if any, and calculatate the position of the curve with respect to all the asymptotes, then SKETCH the INFINITE BRANCHES and the ASYMPTOTES according to the chart.

**USE THE BLANK SPACES TO SHOW ALL _your_ CALCULATIONS**

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

| $x$ | $-\infty$ | $+\infty$ |
|---|---|---|
| _limits_ of $f$ | | |

_Asymptotes and relative positions calculations_   |   _Sketch of the infinite branches only_

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

| $x$ | $-\infty$ | $+\infty$ |
|---|---|---|
| _limits_ of $f$ | | |

_Asymptotes and relative positions calculations_   |   _Sketch of the infinite branches only_

(c) $f(x) = \dfrac{2x^3 - x^2 + 2}{(2x - 3)^2}$

| $x$ | $-\infty$ | $+\infty$ |
|---|---|---|
| _limits_ of $f$ | | |

_Asymptotes and relative positions calculations_   |   _Sketch of the infinite branches only_

(e) $f(x) = \dfrac{x^2 + 4x}{\sqrt{|x^2 + 4x + 1|}}$

| $x$ | $-\infty$ | $+\infty$ |
|---|---|---|
| *limits* of $f$ | | |

*Asymptotes and relative positions <u>calculations</u>*

*Sketch of the <u>infinite branches only</u>*

(f) $f(x) = x\sqrt{\left|\dfrac{1-x}{1+x}\right|}$

| $x$ | $-\infty$ | $+\infty$ |
|---|---|---|
| *limits* of $f$ | | |

*Asymptotes and relative positions <u>calculations</u>*

*Sketch of the <u>infinite branches only</u>*