Ex. 26: $f(x) = ax + b + \frac{c}{x} + o\left(\frac{1}{x}\right)$

1) En $-\infty$: $u(x) = (x^3)^{\frac{1}{3}} \left(1 - \frac{2}{x} + \frac{1}{x^3}\right)^{\frac{1}{3}} = x\left(1 - \frac{2}{3x} - \frac{1}{9}\times\frac{4}{x^2} + o\left(\frac{1}{x^2}\right)\right)$

$= x - \frac{2}{3} - \frac{4}{9x} + o\left(\frac{1}{x}\right)$

$v(x) = \sqrt{x^2}\sqrt{1+\frac{1}{x}+\frac{1}{x^2}} = |x|\left(1+\frac{1}{x}+\frac{1}{x^2}\right)^{\frac{1}{2}} = -x\left(1+\frac{1}{2x}+\frac{1}{2x^2}-\frac{1}{8x^2}+o\left(\frac{1}{x^2}\right)\right)$

$= -x - \frac{1}{2} + \frac{3}{8x} + o\left(\frac{1}{x}\right)$

$f(x) = u(x) - v(x) = \underbrace{2x - \frac{1}{6}}_{\text{asymptote}} - \underbrace{\frac{59}{72x}}_{>0} + o\left(\frac{1}{x}\right)$

2) En $+\infty$: $\sqrt{x^2} = +x$, de $v(x) = x + \frac{1}{2} - \frac{3}{8x} + o\left(\frac{1}{x}\right)$

de $f(x) = \underbrace{-\frac{7}{6}}_{\text{asymptote}} \underbrace{-\frac{5}{72x}}_{<0} + o\left(\frac{1}{x}\right)$