$f' < 0$ on $(-\infty, 0)$ and $(2, \infty)$, so f is decreasing on $(-\infty, 0)$ and $(2, \infty)$.

$f' > 0$ on $(0, 2)$, so f is increasing on $(0, 2)$.

(f) What are the local maximum value and the local minimum value?

Since f changes from increasing to decreasing at $x = 2$, f has a maximum value of $f(2) = \frac{1}{4}$. f does not have any maxima or minima at $x = 0$ since f has a vertical asymptote at $x = 0$.

(g) Find the intervals of concavity.

First, we find the second derivative:

$$\begin{aligned} f'' &= \frac{(-1)(x^3) - (2-x)(3x^2)}{(x^3)^2} \\ &= \frac{-x^3 - (6x^2 - 3x^3)}{x^6} \\ &= \frac{2x^3 - 6x^2}{x^6} = \frac{2x^2(x-3)}{x^6} \\ &= \frac{2(x-3)}{x^4} \end{aligned}$$

Setting f'' to zero and solving for x, we get $x = 3$.

	$x < 0$	$0 < x < 3$	$x > 3$
$2(x-3)$	$-$	$-$	$+$
x^4	$+$	$+$	$+$
f'	$-$	$-$	$+$

Since $f'' < 0$ on $(-\infty, 0)$ and $(0, 3)$, f is concave down on $(-\infty, 0)$ and $(0, 3)$.

Since $f'' > 0$ on $(3, \infty)$, f is concave up on $(3, \infty)$.

(h) Find the inflection points.

Since f changes concavity at $x = 3$, $(3, f(3)) = (3, \frac{2}{9})$ is an inflection point.

(i) Using parts (a)-(g), graph the function.