n	$f^{(n)}(x)$	$f^{(n)}(2)$
0	$x^4 - 6x^2 + 5$	-3
1	$4x^3 - 12x$	8
2	$12x^2 - 12$	36
3	$24x$	48
4	24	24
5	0	0
6	0	0
$\vdots$	$\vdots$	$\vdots$

$f^{(n)}(x) = 0$ for $n \geq 5$, so f has a finite series expansion about $a = 2$.

$$\begin{aligned} f(x) &= x^4 - 6x^2 + 5 = \sum_{n=0}^{4} \frac{f^{(n)}(2)}{n!}(x-2)^n \\ &= \frac{-3}{0!}(x-2)^0 + \frac{8}{1!}(x-2)^1 + \frac{36}{2!}(x-2)^2 + \frac{48}{3!}(x-2)^3 + \frac{24}{4!}(x-2)^4 \\ &= -3 + 8(x-2) + 18(x-2)^2 + 8(x-2)^3 + (x-2)^4 \end{aligned}$$

A finite series converges for all x, so $R = \infty$.