

$$f(x) = -2x^2 + \frac{1}{4x^2};$$

$$f'(x) = -4x - \frac{1}{2x^3};$$

To locate the critical points:

$$f'(x) = 0;$$

$$\frac{8x^4 + 1}{2x^3} = 0;$$

$$x^4 = -\frac{1}{8}, \text{ no solutions}$$

$x \neq 0$ , so  $x = 0$  – critical point

Type of critical point is that where  $f'(x)$  is undefined.