Let $f(x) = 6x - 2x^3 + 4$. Then $f'(x) = 6 - 6x^2$ and $f''(x) = -12x$.

(a) $f'(x) = 6 - 6x^2 = 6(1 - x)(1 + x) = 0$ when $x = \pm 1$.

We can use the Second Derivative Test to determine if $f$ has any local maxima or minima.

$f''(1) < 0$, therefore $f$ has a local maximum at $x = 1$.

$f''(-1) > 0$, therefore $f$ has a local minimum at $x = -1$.

(b) To find the global extrema of $f$ we need to evaluate $f$ at the critical points and the endpoints of the interval $[-3, 2]$.

$f(1) = 8$
$f(-1) = 0$
$f(-3) = 40$
$f(2) = 0$

Therefore, on the interval $[-3, 2]$, $f$ has a global minimum of 0 at $x = -1$ and $x = 2$, and $f$ has a global maximum of 40 at $x = -3$.

(c) From above, we know that the maximum value of $f$ on the interval $[-3, 2]$ is 40, while the minimum value of $f$ is 0. The graph of $f$ on $[-3, 2]$ is provided below.

Therefore, $0 \leq f(x) \leq 40$ on $[-3, 2]$. 