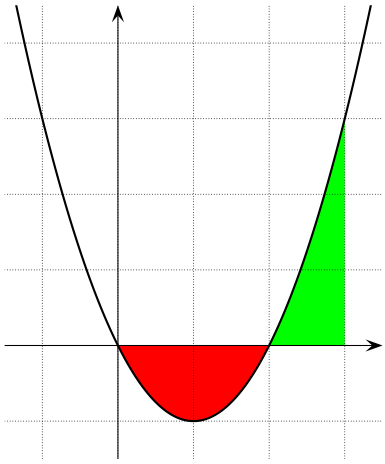
11.3 1) $f(x) = x^2 - 2\,x = x\,(x-2)$

		0		2	
x	$-$	0	$+$		$+$
$x-2$	$-$		$-$	0	$+$
f	$+$	0	$-$	0	$+$



2) $\displaystyle\int_0^3 (x^2 - 2\,x)\,dx = \tfrac{1}{3}\,x^3 - x^2 \Big|_0^3 = (\tfrac{1}{3}\cdot 3^3 - 3^2) - (\tfrac{1}{3}\cdot 0^3 - 0^2) = 0 - 0 = 0$

3) $\displaystyle -\int_0^2 (x^2 - 2\,x)\,dx + \int_2^3 (x^2 - 2\,x)\,dx = \left(-\tfrac{1}{3}\,x^3 + x^2 \Big|_0^2\right) + \left(\tfrac{1}{3}\,x^3 - x^2 \Big|_2^3\right)$

$= \big((-\tfrac{1}{3}\cdot 2^3 + 2^2) - (-\tfrac{1}{3}\cdot 0 + 0^2)\big) + \big((\tfrac{1}{3}\cdot 3^3 - 3^2) - (\tfrac{1}{3}\cdot 2^3 - 2^2)\big)$

$= \big(\tfrac{4}{3} - 0\big) + \big(0 - (-\tfrac{4}{3})\big) = \tfrac{4}{3} + \tfrac{4}{3} = \tfrac{8}{3}$