

$$13) \int_2^4 (x^2 - 6x + 8) dx \leq 0$$

$$x^2 - 6x + 8 > 0$$

$$\forall x \in [2, 4]$$

$$(x-2)(x-4) \leq 0$$

$$x \leq 2 / x \leq 4$$

$$\text{So } (x-2)(x-4) \leq 0$$



$$15) \int_0^{2\pi} (1 + \sin x) dx \geq 0$$

$$1 + \sin(0) = 1 \geq 0$$

$$1 + \sin(2\pi) = 1 \geq 0$$

$$-1 \leq \sin x \leq 1$$

$$0 \leq \sin x + 1 \leq 2$$

$$1 + \sin x \geq 0 \quad \forall x \in [0, 2\pi]$$

