Zadatak 16. Nađi najveću i najmanju vrijednost funkcije F na danom intervalu:

1) $F(x) = \int_0^x (t+1)dt$ na $[2,3]$;

2) $F(x) = \int_0^x \sin t\, dt$ na $[0, \frac{\pi}{2}]$;

3) $F(x) = \int_0^x (t^2 - 5t + 6)dt$ na $[0,4]$.

Rješenje. **1)** $F(x) = \int_0^x (t+1)dt = \frac{t^2}{2}\Big|_0^x + t\Big|_0^x = \frac{x^2}{2} + x$. $F(2) = 4$, $F(3) = 7.5$.

2) $F(x) = \int_0^x \sin t\, dt = -\cos t\Big|_0^x = -(\cos x - \cos 0) = 1 - \cos x$. $F(0) = 0$, $F\left(\frac{\pi}{2}\right) = 1$.

3) $F(x) = \int_0^x (t^2 - 5t + 6)dt = \frac{t^3}{3}\Big|_0^x - \frac{5t^2}{2}\Big|_0^x + 6t\Big|_0^x = \frac{x^3}{3} - \frac{5x^2}{2} + 6x$. $F(0) = 0$, $F(4) = \frac{16}{3}$.