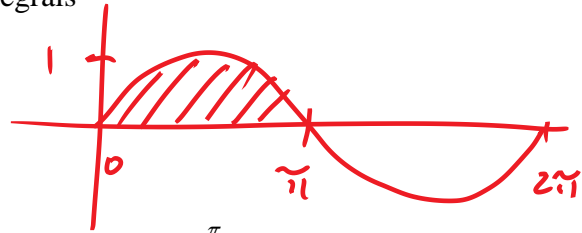


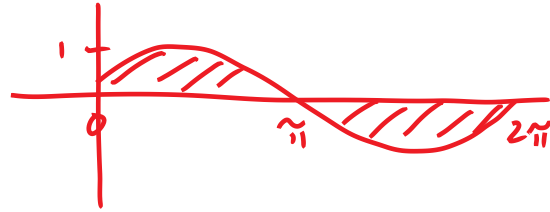
Graph one period of the function $\sin(x)$.



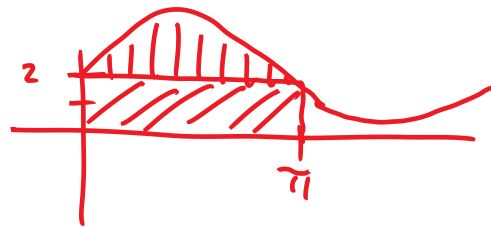
Using the **fnint** function on the calculator evaluate the definite integral $\int_0^{\pi} \sin x \, dx = 2$

Using your answer above and **without a calculator**, determine the values of the following definite integrals. Start by sketching a graph of the function and shade the area the integral represents. Verify your answers by graphing the function on your calculator and using fnint to evaluate the integral.

1. $\int_0^{2\pi} \sin x \, dx = 0$



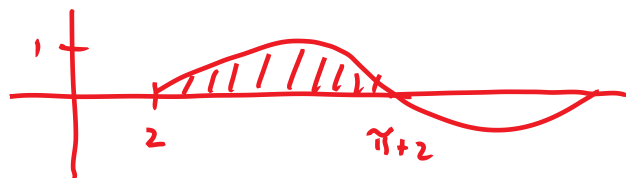
2. $\int_0^{\pi} (2 + \sin x) \, dx = 2 + 2\pi$



3. $\int_0^{\pi} (2 \sin x) \, dx = 4$



4. $\int_2^{\pi+2} \sin(x-2) \, dx = 2$



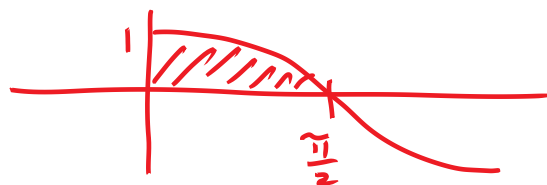
5. $\int_{-\pi}^{\pi} \sin u \, du = 0$



6. $\int_0^{2\pi} \sin(t/2) \, dt = 4$

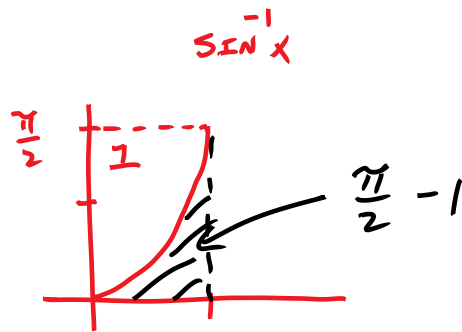
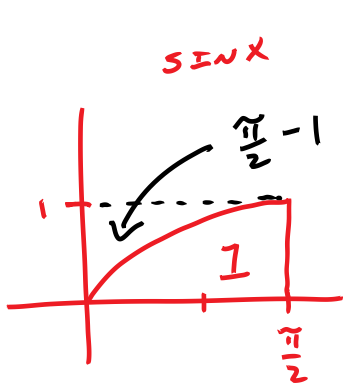


7. $\int_0^{\pi/2} \cos r \, dr = 1$



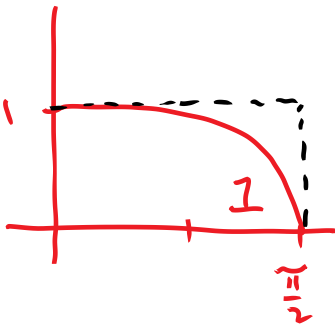
8. $\int_0^1 \sin^{-1} x \, dx =$

Hint: Graph $\sin(x)$ on $[0, \frac{\pi}{2}]$ and Use $\int_0^{\pi/2} \sin x \, dx = 1$ to help you.



9. $\int_0^1 \cos^{-1} x \, dx =$ 1

$\cos x$



$\cos^{-1} x$

