Names: __Jordan, Holly, Tyson__

LT17: I can use the Fundamental Theorem of Calculus to evaluate definite integrals.

1. Compute the value of the definite integral. Note that you can check if you have the correct antiderivative before evaluating it at the endpoints.

(a) $\int_0^2 4x^3 dx$ x^4

$$\frac{4}{4}(2)^4 = 16 - 0 = \boxed{16}$$

$$\frac{4}{4}x^4 \Big|_0^2 \nearrow$$

(b) $\int_0^{\ln 8} e^x dx$

$$e^{\ln 6} = 8 - 1 = \boxed{7}$$

$$e^0 = 1 \;\nearrow$$

✓

(c) $\int_0^{\frac{\pi}{4}} \cos(x) dx$

$\sin(x)$

$$\sin\left(\frac{\pi}{4}\right) - \sin(0) = \boxed{\sin\left(\frac{\pi}{4}\right) \text{ or } \frac{\sqrt{2}}{2}}$$