

WARM UP

1. The radius of a sphere is decreasing at a rate of 2cm per second. At the instant when the radius of the sphere is 3 cm, what is the rate of change of the surface area of the sphere?

2.
$$\int \frac{\sin\left(t^{\frac{1}{3}}\right) dt}{t^{\frac{2}{3}}}$$

u-Substitution: Day 2

Objective:

- Integrate functions using u-sub when there is an extra x in the integrand.

$$\text{Ex. 1: } \int x(4x - 1)^4 dx$$

$$\text{Ex. 2: } \int (x + 3)\sqrt{4 - x} dx$$

Ex. 3: $\int x^2 \sqrt{3-x} dx$