

November 5, 2025

National Eating Healthy Day

Today in History:

FDR re-elected president (1940)

Susan B. Anthony voted and was arrested (1872)

Number of the Day: 693

693 = $3 \times 3 \times 7 \times 11$

693 is 1010110101 in base 2.

Fun Fact:

To lift a 110 pound person, you'll need 4,000 helium balloons.

Quote of the Day:

"Glory is fleeting, but obscurity is forever."

- Napoleon Bonaparte

Today's Weather:

Cloudy and windy, high of 61°

Math 121 - Quiz #35

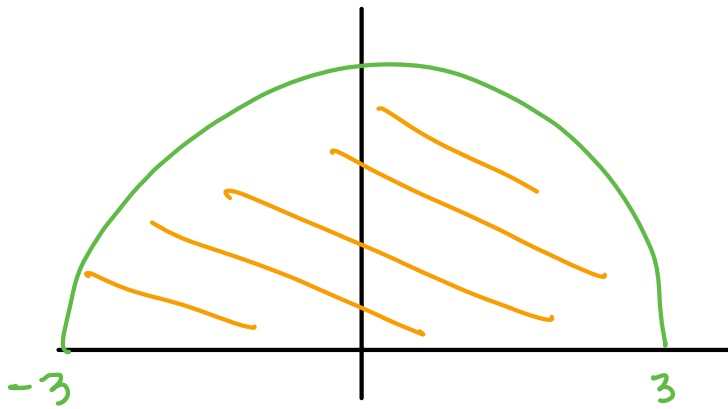
Draw a picture of the region and find

$$\int_{-3}^3 \sqrt{9-x^2} dx = \frac{9\pi}{2}$$

$$y = \sqrt{9-x^2}$$

$$y^2 = 9-x^2$$

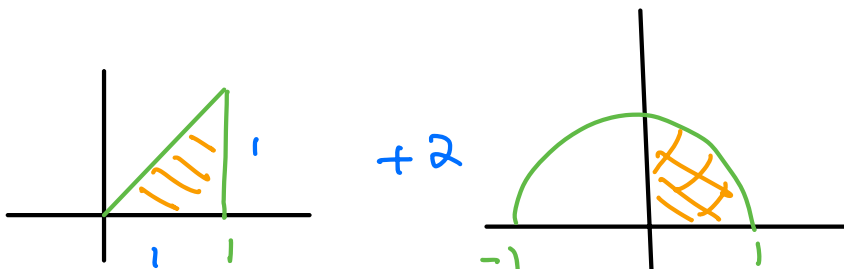
$$x^2 + y^2 = 9$$



m.pod 35 *5

$$\int_0^1 (x + 2\sqrt{1-x^2}) dx$$

$$= \int_0^1 x dx + 2 \int_0^1 \sqrt{1-x^2} dx$$



$$\frac{1}{2} + 2 \frac{\pi}{4} = \frac{1}{2} + \frac{\pi}{2}$$

⑥

$$\int_0^3 \sqrt{6x - x^2} dx$$

$$y = \sqrt{6x - x^2}$$

$$y^2 = 6x - x^2$$

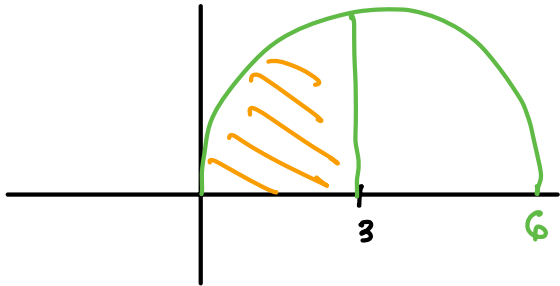
$$x^2 - 6x + 9 + y^2 = 0 + 9$$

$$(x - 3)^2 + y^2 = 9$$

CIRCLE CENTER
(3, 0)

$$R = 3$$

$$= \frac{9\pi}{4}$$



$$f(x) = x^3$$

$$f'(x) = 3x^2$$

SOME FUNCTION HAS DERIVATIVE $3x^2$
WHAT IS THE FUNCTION?

$$f(x) = x^3 + 7$$

ANTI-DERIVATIVE.

$$\int f(x) dx = F(x) + C$$

WHERE $F'(x) = f(x)$

$$\int 3x^2 dx = x^3 + C$$

POWER RULE

$$\int x^N dx = \frac{x^{N+1}}{N+1} + C \quad N \neq -1$$

$$\textcircled{1} \int x^2 dx = \frac{x^3}{3} + C$$

$$\textcircled{2} \int \sqrt{x} dx = \int x^{\frac{1}{2}} dx = \frac{x^{\frac{3}{2}}}{\frac{3}{2}} = \frac{2x^{\frac{3}{2}}}{3} + C$$

$$\textcircled{3} \int \frac{1}{x^3} dx = \int x^{-3} dx = \frac{x^{-2}}{-2} = -\frac{1}{2x^2} + C$$

$$\textcircled{4} \int \frac{1}{\sqrt[3]{x^2}} dx = \int x^{-\frac{2}{3}} dx = \frac{x^{\frac{1}{3}}}{\frac{1}{3}} = 3x^{\frac{1}{3}} + C$$

$$\textcircled{5} \int \frac{1}{x} dx = \ln|x| + C$$

SUM RULE

FIRE ALARM

FRIDAY