



LESSON 29

MA 16100 · FALL 2022

DR. HOOD



WARM UP

Let $F(x) = x^3$, $G(x) = x^3 + 7$, and
 $H(x) = x^3 - 10,000$.

Then $F'(x) = G'(x) = H'(x)$

$$F'(x) = 3x^2$$
$$G'(x) = 3x^2 + 0$$
$$H'(x) = 3x^2$$

a) True

b) False

ANNOUNCEMENTS

- Dr. Hood's Office Hours in Math 844
 - Mon, Wed: 3:30-4:30pm
 - Fri: 2:30-3:30pm
- TA's Office Hours in [Math Resource Room](#) (WTHR 313)
 - Mon – Thu: 9:30am – 8:30pm
 - Fri: 9:30am – 3:30pm

EXAM 3

- Exam 3 is Tuesday Nov 15
 - 6:30 – 7:30pm in ELLT
- Brightspace > “Content” > “Exam 3”
 - Study Guide
 - Frequently Asked Questions
 - Exam Conflict Form

THANKSGIVING BREAK

- Thanksgiving Break
 - University Holiday is Wed Nov 23 – Fri Nov 25
 - MA 161 additional breaks:
 - No class on Mon Nov 21
 - No recitation on Tue Nov 22
 - No HW or Quizzes that week
 - No Office Hours on Mon Nov 21
 - Math Resource Room closed Mon Nov 21 – Fri Nov 25

POLL 1

Let $f(x) = x^n$. Find all the possible antiderivatives $F(x)$.

a) $F(x) = nx^{n-1} + C$

b) $F(x) = x^{n+1} + C$

c) $F(x) = \frac{x^{n+1}}{n+1} + C$

$\frac{d}{dx} \left[\frac{x^{n+1}}{n+1} + C \right]$
 $= \frac{(n+1)x^{(n+1)-1}}{(n+1)} + 0$
 $= x^n \quad \checkmark$

$\frac{d}{dx} x^n$

POLL 2

$$\int x^{-1} dx = \frac{x^{-1+1}}{-1+1} = \frac{x^0}{0}$$

$$\frac{d}{dx}(1+C) = 0$$

$$\int \left(\frac{1}{x}\right) dx = ?$$

a) $1 + C$

b) $\ln|x| + C$

c) $\frac{1}{x^2} + C$

$$\frac{d}{dx}(\ln|x| + C) = \frac{1}{x}$$