

$$f(x) = x^2(1-x^2)^3$$

Power Rule
 $uv' + u'v$

$$f'(x) = x^2 \cdot [(1-x^2)^3]' + [x^2]'(1-x^2)^3$$

$$= x^2(3)(1-x^2)^2(-2x) + (2x)(1-x^2)^3$$

$$= -6x^3(1-x^2)^2 + 2x(1-x^2)^3$$

$$= -6x^3(1-2x+x^4) + 2x(1-3x^2+3x^4-x^6)$$

$$= -6x^3(x^4-2x^2+1) + 2x(x^6+3x^4-3x^2+1)$$

$$= -6x^7 + 12x^5 - 6x^3 - 2x^7 + 6x^5 - 6x^3 + 2x$$

$$(A-B)^3 = A^3 - 3A^2B + 3AB^2 + B^3$$

$$f(x) = [x^2(1-x^2)^3]$$

$$f'(x) =$$

$$= (-8x^7)$$

↑ Degree
 ↑ Max Term

If f is continuous on an open interval
 I containing c and differentiable,
except possibl at c, \dots

Don't know $f(x)$ at $x=c$ \Rightarrow Sharp turn

Hole \times

$$F(x) = \int (3x^4 - 5x^2 + x) dx$$

จงหาค่าคงตัวของพหุนามกำลัง 6 term ี่มี degree เป็นเลขคี่ของ $F(x)$

$$F(x) = \frac{3}{5}x^5 - \frac{5}{3}x^3 + \frac{x^2}{2} + C$$

$$\text{Ans.} = \frac{3}{5} - \frac{5}{3}$$

$$= \frac{9}{15} - \frac{25}{15} = \frac{-16}{15} \quad \#$$

Q. સ્વપ્ન-વિશ્લેષણ શક્ય છે કે નહીં?

$$X^0 \rightarrow ?$$

$$\int (2x+3)^7 dx = \frac{a}{b} (cx^d + e)^f + k$$

find $(a+b+c+d+e+f)$

↳ ถ้าเลือก choice มาช่วยได้

$$\frac{1}{2} \int (2x+3)^7 (2) dx = \frac{\frac{1}{2} (2x+3)^8}{8} = \frac{1}{16} (2x+3)^8 + C$$

$$a=1, b=16, c=2, d=1$$

$$e=3, f=8$$

$$\text{Sum} = 31$$

- ☐ A 22
- ☐ B 23
- ☐ C 30
- ☐ D No Ans.

