warm-up

$$\int_{3}^{3} (3x+1)^{4} dx = \int_{3}^{4} (3x+1)$$

du = 3 dx

$$\int u^{n} du$$

$$\int x^{3} dx = \frac{x^{4}}{4} + c$$

$$(3x+1)^{5} + c$$

$$\int (5x+7)^{2} dx$$

$$U = 5x+7$$

$$du = 5$$

$$du = 5dx$$

$$5$$

think: turn into 
$$\int u \, du$$

$$\int u \cdot \frac{1}{5} \, du = \frac{1}{5} \int u \, du$$

$$= \frac{1}{75} u^7 + c$$

$$= \frac{1}{35} (5\chi + 7)^7 + c$$

Practile;

$$\int \cos(8x) dx = \int \cos(u) \frac{1}{8} du$$

$$= \frac{1}{2} \left(\cos(u) du\right)$$

(cosadu= smn+c

Jundu = un+1 + c

11-8X m=8 yx 18 du = dx

$$= \frac{1}{8} \int \cos(u) du$$

$$= \frac{1}{8} \sin(u) + C = \frac{1}{8} \sin(8x) + C$$

 $\frac{1}{2} \int (1+2x)^{5} 2 dx = \frac{1}{2} \int u^{5} du = \frac{1}{2} u^{6} + c$ think: Juda

No.
Well, insert it

only put in/componente

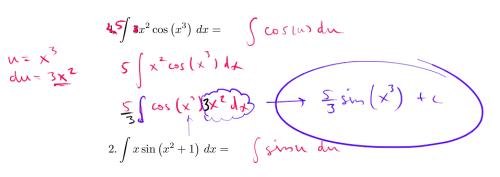
 $\frac{1}{3}$  (3-4x2)(-8)x dx -

No. Insert & Compensati

$$-\frac{1}{8}\int u du = (3-1)^{2} + c = -\frac{1}{16}(3-4)^{2} + c$$

## Antiderivatives 4

Find the indicated antiderivative. Check your answers.



Marke (x -4) Eng(x4) dx =

4. 
$$\int 3x^2 \sec^2(x^3) dx =$$

$$5. \int 2 (5x) \, dx =$$