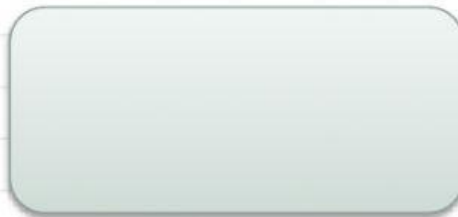


LEMBAR KERJA PESERTA DIDIK 2

Turunan Fungsi Trigonometri

A. Perhatikan kembali materi dalam video ini



B. kerjakan soal dibawah ini!

1. Tentukan turunan fungsi trigonometri berikut.

$$f(x) = 2x \cos x - x^3$$

Penyelesaian:

$$y = 2x \cos x - x^3$$

Untuk $2x \cdot \cos x$ dimisalkan:

$$u = 2x \rightarrow u' = 2$$

$$v = \cos x \rightarrow v' = \boxed{}$$

Jadi,

$$y' = 2 \cdot \boxed{} + 2x \cdot \boxed{}$$

$$y' = \boxed{}$$

2. Tentukan $f'(x)$ dan nilai $f'(x)$ dari fungsi $f(x) = 3x - \cos x + \tan x$ untuk $x = \frac{\pi}{3}$.

Penyelesaian:

$$f(x) = 3x - \cos x + \tan x$$

$$f'(x) = 3 + \sin x - \boxed{}$$

$$f'\left(\frac{\pi}{3}\right) = 3 + \boxed{}$$

$$= 3 + \boxed{}$$

$$= \boxed{}$$

3. Jika $f(x) = 4 \cos^3 x$, maka tentukan nilai $f'(x)$ untuk $x = \frac{\pi}{3}$

Penyelesaian

$$f(x) = 4 \cos^3 x$$

$$f'(x) = \boxed{} \cdot (-\sin x)$$

$$f'(x) = -12 \cdot \sin x \cdot \cos^2 x$$

$$f'\left(\frac{\pi}{3}\right) = -12 \cdot \boxed{}$$

$$f'\left(\frac{\pi}{3}\right) = \boxed{}$$

$$f'\left(\frac{\pi}{3}\right) = \boxed{}$$

4. Jika $f(x) = 3 \cdot \sin x \cdot \cos x$, maka tentukan nilai $f'(\frac{1}{4}\pi)$

Penyelesaian

$$U = 3 \sin x$$

$$U' = 3 \cos x$$

$$V = \cos x$$

$$V' = -\sin x$$

$$f'(x) = U'V + UV'$$

$$f(x) = 3 \cdot \sin x \cdot \cos x$$

$$f'(x) =$$

$$f'(x) = 3\cos^2 x - 3\sin^2 x$$

Substitusikan $x = \frac{1}{4}\pi$, maka

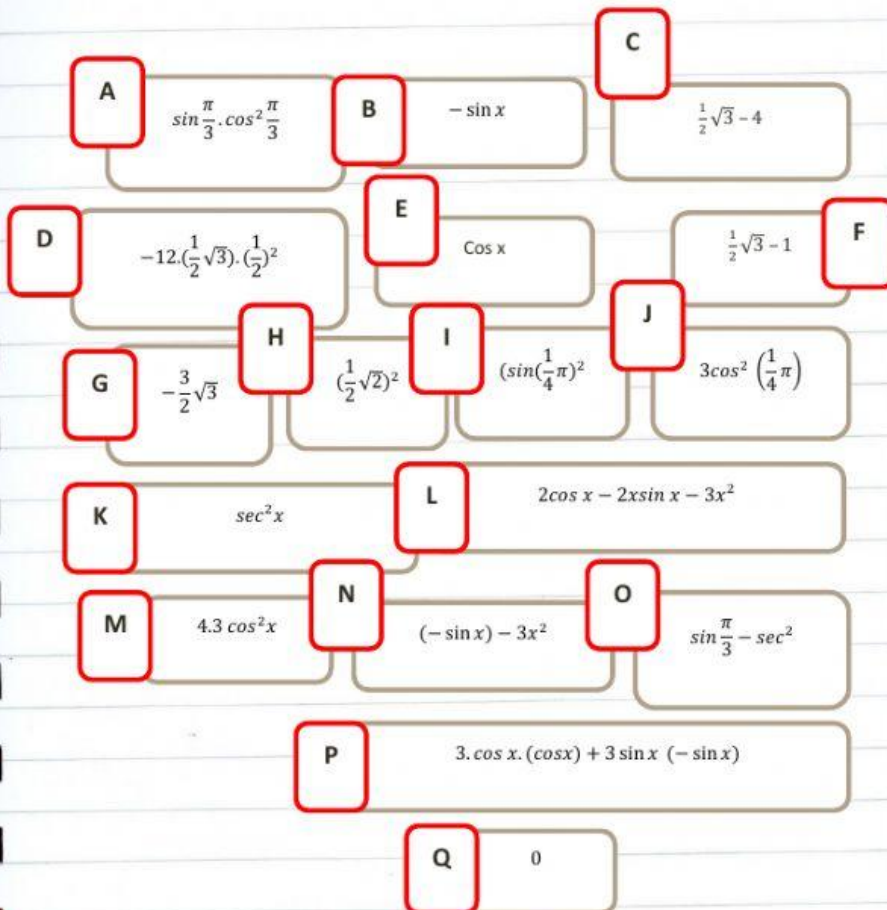
$$f'(\frac{1}{4}\pi) = -3\sin^2(\frac{1}{4}\pi)$$

$$f'(\frac{1}{4}\pi) = 3 \left[(\cos(\frac{1}{4}\pi))^2 - \right]$$

$$f'(\frac{1}{4}\pi) = 3 \left[-(\frac{1}{2}\sqrt{2})^2 \right]$$

$$f'(\frac{1}{4}\pi) =$$

Jawaban



Math is Fun

Good Luck