



Kurikulum
Merdeka

Lembar Kerja Peserta Didik (LKPD)

Kurikulum Merdeka Belajar



Nama :

Kelas :

No. Absen :

MAN 2 JAKARTA

LATIHAN

Fungsi Invers



Let's answer it!

Isilah kotak kosong yang tersedia agar penyelesaian soal terisi sempurna!

SOAL 1

sebuah fungsi f dinyatakan dengan $f(x) = \frac{4x + 5}{2x}$.

tentukanlah invers dari fungsi f tersebut!

JAWAB

$$f(x) = \frac{4x + 5}{2x}$$

$$\dots = \frac{4x + 5}{2x}$$

$$y(\dots) = 4x + 5$$

$$2xy = 4x + 5$$

$$2xy - (\dots) = 5$$

$$(\dots)(2y - 4) = (\dots)$$

$$x = \frac{5}{2y - 4}$$

$$\text{Maka, } (\dots)(x) = \frac{5}{(\dots)-4}$$

LATIHAN

Fungsi Invers

? **Let's answer it!**

SOAL 2

Carilah nilai $g^{-1}(7)$ jika diketahui fungsi g yaitu $g(x) = 4x^2 - 8$

JAWAB

$$g(x) = 4x^2 - 8$$

$$y = 4x^2 - 8$$

$$(\dots - \dots) = y$$

$$(\dots)x^2 = y + \dots$$

$$x^2 = \frac{\dots + \dots}{\dots}$$

$$\dots = \sqrt{\frac{y + \dots}{\dots}}$$

$$\text{Sehingga, } g^{-1}(x) = \sqrt{\frac{\dots + 8}{\dots}} = \frac{\sqrt{\dots + \dots}}{\dots}$$

$$\text{Selanjutnya nilai } g^{-1}(7) = \sqrt{\frac{(\dots) + 8}{4}} = \frac{\sqrt{\dots}}{\dots}$$

LATIHAN

Fungsi Invers

Let's answer it!

SOAL 3

Buktikan bahwa invers fungsi $h(x) = \frac{2-x}{x+3}$ adalah $h^{-1}(x) = \frac{-3x+2}{x+1}$!

JAWAB

$$h(x) = \frac{2-x}{x+3}$$

$$... = \frac{2-x}{x+3}$$

$$... (.... +) = 2 -$$

$$... + 3y = 2 - x$$

$$xy + = + 2$$

$$x(.... +) = +$$

$$x = \frac{.... +}{.... +}$$

$$\text{maka, } h^{-1}(x) = \frac{-3x+2}{x+1} \quad (\text{TERBUKTI})$$





LATIHAN

Fungsi Invers

Let's answer it!

SOAL 4

Jika $f(x) = x + 2$ dan $g(x) = \frac{x}{x+5}$, maka nilai $(g^{-1} \circ f)(4)$

JAWAB

Akan dicari invers dari fungsi g

$$g(x) = \frac{x}{x+5}$$

$$g^{-1}(x) = \frac{\dots}{\dots - 1}$$

$$(g^{-1} \circ f)(x) = g^{-1}(f(x))$$

$$(g^{-1} \circ f)(x) = \frac{-5 \dots}{\dots - 1}$$

$$(g^{-1} \circ f)(x) = \frac{-5(\dots + \dots)}{(\dots + \dots) - 1}$$

$$(g^{-1} \circ f)(x) = \frac{-5x - 10}{x + 1}$$

$$\text{Nilai } (g^{-1} \circ f)(x) = \frac{-5(\dots) - 10}{(\dots) + 1} = \frac{\dots}{\dots} = \dots$$

LATIHAN

Fungsi Invers



Let's answer it!

SOAL 5

Diketahui fungsi $f(2x - 5) = 5x - 3$, carilah nilai dari $f^{-1}(\sqrt{81})$

JAWAB

$$f(2x - 5) = 5x - 3$$

Misalkan. $2x - 5 = \dots$ maka $x = \frac{\dots + \dots}{\dots}$

$$f(x) = 5 \left(\frac{\dots + \dots}{\dots} \right) - \dots = \frac{5 \dots + \dots}{\dots} - 3 = \frac{\dots + 25}{2} - \frac{\dots}{\dots} = \frac{\dots + \dots - \dots}{2} = \frac{\dots + \dots}{\dots}$$

$$f(x) = \frac{\dots + \dots}{2}$$

$$f^{-1}(x) = \frac{\dots + \dots}{\dots}$$

Karena $\sqrt{81} = \dots$, maka

$$\text{nilai } f^{-1}(9) = \frac{\dots (\dots) + \dots}{\dots} = \frac{\dots}{\dots} = -\frac{\dots}{\dots}$$