Lembar Kerja Peserta Didik (LKPD)

Persamaan Eksponen (Jenis 1-2)

JENIS 1

INGAT: $a^{f(x)} = a^p \rightarrow f(x) = p$

1) Tentukan nilai x yang memenuhi persamaan $3^{2x-1} = \frac{1}{27}$
   Jawab:

$$3^{2x-1} = 3^{\cdots}$$

$$2x - 1 = \ldots$$

$$2x = \ldots$$

$$x = \ldots$$

2) Tentukan nilai x yang memenuhi persamaan $\left(\frac{2}{5}\right)^{\frac{1}{2}} = \left(\frac{5}{2}\right)^{x+1}$
   Jawab:

$$\left(\frac{2}{5}\right)^{\frac{1}{2}} = \left(\frac{2}{5}\right)^{\cdots}$$

$$\frac{\cdots}{\cdots} = -x - \ldots$$

$$x = \frac{\cdots}{\cdots}$$

3) Tentukan himpunan penyelesaian persamaan $4^{1+2x} \times 3^{4x+1} = 432$
   Jawab:

$$4^{\cdots} \times 4^{2x} \times 3^{\cdots} \times 3^1 = 432$$

$$4^{\cdots} \times 3^1 \times 4^{2x} \times 3^{\cdots} = 432$$

$$(4 \times 3)^1 \times (4 \times 3^2)^{\cdots} = 432$$

$$36^{\cdots} = \frac{432}{4 \times 3}$$

$$36^{\cdots} = \ldots$$

$$x = \frac{\cdots}{\cdots}$$

LIVEWORKSHEETS
LIVEWORKSHEETS

JENIS 2

INGAT: $a^{f(x)} = a^{g(x)} \rightarrow f(x) = g(x)$

1) Tentukan nilai x dari persamaan $10^{2-3x} = 10^{5x-6}$
   Jawab:

$$10^{2-3x} = 10^{5x-6}$$

$$2 - \ldots = 5x - \ldots$$

$$\ldots\ x = \ \ldots$$

$$x = \ldots$$

2) Tentukan nilai x dari persamaan $\sqrt{125^{x-2}} = \left(\frac{1}{5}\right)^{3-2x}$
   Jawab:

$$125^{\frac{x-2}{\ldots}} = 5^{2x-3}$$

$$5^{\frac{\ldots(x-2)}{\ldots}} = 5^{2x-3}$$

$$\ldots(x-2) = \ldots(2x-3)$$

$$3x - \ldots = 4x - \ldots$$

$$x = \ldots$$

3) Tentukan himpunan penyelesaian persamaan $\left(\frac{1}{9^{2x}}\right)^{\frac{1}{3}} = \frac{(27^x)^2}{81^{x-2}}$
   Jawab:

$$\left(\frac{1}{3^{\ldots}}\right)^{\frac{1}{3}} = \frac{3^{\ldots x}}{3^{\ldots(x-2)}}$$

$$3^{-\frac{\ldots}{3}x} = 3^{\ldots-4x+\ldots}$$

$$3^{-\frac{\ldots}{3}x} = 3^{\ldots x+\ldots}$$

$$-\frac{\ldots}{3}x = \ldots x + \ldots$$

$$-4x = \ldots x + \ldots$$

$$\ldots x = 24$$

$$x = -\frac{\ldots}{\ldots}$$

LIVEWORKSHEETS
LIVEWORKSHEETS