

Day 16

$$2^x + 2^x - 2^{x-1} = 28$$

$$2^{x-1} (2^2 + 2^1 + 1) = 28$$

$$2^{x-1} \cdot 7 = 7 \cdot 4$$

$$x-1=2$$

$$x=3$$

$$4\sqrt{x+1} - 2\sqrt{x+1} + 2 = 0$$

$$2\sqrt{x+1} = 0$$

$$2\sqrt{x+1} = 0$$

$$2 = 2$$

$$2a = a+2$$

$$a=2$$

$$\sqrt{x+1}=2$$

$$x+1=4$$

$$x=3$$

$$27 = 3^3 = 3^2 \cdot 3$$

$$4^3 = 4 \cdot 4 \cdot 4 = 64$$

$$4^3 = (2^2)^3 = 2^6$$

day 16

N5

$$2 - 3 + 3^{x+1} = 0$$

$$2 - \frac{1}{3^x} + 3^x \cdot 3 = 0$$

$$\frac{2 \cdot 3^x - 1 + 3^x \cdot 3^x \cdot 3}{3^x} = 0$$

$$\frac{2 \cdot 3^x - 1 + 3 \cdot 3^{2x}}{3^x} = 0$$

$$\frac{3 \cdot 3^{2x} + 2 \cdot 3^x - 1}{3^x} = 0$$

Day 16 $3^x = a$, maka

$$3a^2 + 2a - 1 = 0$$

$$3a^2 + 2a = 1$$

$$a(3a+2) = 1$$

$$D = b^2 - 4ac = 2^2 - 4 \cdot 3 \cdot (-1) = 4 + 12 = 16 = 4^2$$

$$a_1 = \frac{-b \pm \sqrt{D}}{2a} = \frac{-2 \pm \sqrt{16}}{6} = \frac{-2 \pm 4}{6} = \frac{-4}{6} = -\frac{1}{2}$$

$$a_2 = \frac{-2 + 4}{6} = \frac{2}{6} = \frac{1}{3}$$

$a_2 = 3^x = \frac{1}{3}$ $0 = 3^x$ - *tidak mungkin*

$a_1 = 3^x = 3^{-\frac{1}{2}}$
 $= \frac{1}{\sqrt{3}} = 3^x$ $|x = -\frac{1}{2}$
 $1 = -6^x$
 $x = 0$

$3^2 = 9$
 $3^{\frac{1}{2}} = \sqrt{3}$
 $3^{-\frac{1}{2}} = \frac{1}{\sqrt{3}}$

$$\frac{3^x}{a} = \frac{3^{-x}}{a} = \frac{1}{3^x}$$

$$0 = 2 + 8 - 4$$

$$0 = 2 \cdot 2 + \frac{1}{2} - 2$$

$$0 = 2 \cdot 2 + \frac{1}{2} - 2 \cdot 2$$

$$0 \neq 0$$

$$0 = 1 - 2 \cdot 2 + 2 \cdot 2$$

option, $0 = 1$ *tidak mungkin*

$$0 = 1 - 2 \cdot 2 + 2 \cdot 2$$

$$0 = 3 + 12 + 12 + 12$$

$$3 = 3 = 3 + 3$$

$$3 = 3(1) = 3 = 3 + 3$$

Day 16 N5

$$2 - 3^{-x} + 3^{x+1} = 0$$

$$2 - \frac{1}{3^x} + 3^x \cdot 3 = 0$$

$$\frac{2 \cdot 3^x - 1 + 3^{2x} \cdot 3}{3^x} = 0$$

$$3^x \neq 0$$

$$3 \cdot 3^{2x} + 2 \cdot 3^x - 1 = 0$$

Пусть $3^x = a$, тогда

$$3a^2 + 2a - 1 = 0$$

$$\begin{cases} ax^2 + dx + ex + c = 0 \\ d + e = b = 2 \\ de = ac = 3 \cdot (-1) = -3 \end{cases} \Rightarrow \begin{cases} d = 3 \\ e = -1 \end{cases}$$

$$\cancel{3a^2 + 1} \quad 3a^2 + \cancel{2a} - 1a - 1 = 0$$

$$3a(a+1) - 1(a+1) = 0$$

$$(a+1)(3a-1) = 0$$

$$a+1=0 \quad \text{или} \quad 3a-1=0$$

$$a = -1$$

$$3a = 1$$

$$a = \frac{1}{3}$$

$$3^x = \frac{1}{3} \Rightarrow \frac{1}{3} = 3^{-1}$$

$$3^x = 3^{-1} \Rightarrow x = -1$$

$$1) \quad 3^x = 1$$

$$x = 0$$

Day 16 N6

$$56^{2x-8} = 1$$

т.к. любая число в степени 0 = 1, то $56^0 = 1 \Rightarrow$

$$2x - 8 = 0$$

$$2x = 8$$

$$x = 4$$

$$3^{4-2x} = \left(\frac{1}{27}\right)^{-8} \quad N7$$

$$3^{4-2x} = (27^{-1})^{-8}$$

$$3^{4-2x} = 27^8$$

$$3^{4-2x} = (3^3)^8$$

$$4 - 2x = 24$$

$$-2x = 17$$

$$x = -\frac{17}{2} = -4\frac{1}{2}$$

N8

$$\left(\frac{9}{8}\right)^{3x+12} = 1$$

т.к. любая число в степени 0 = 1, то

$$3x + 12 = 0$$

$$3x = -12$$

$$x = -4$$

day 16

$$3^{4x+4} = \left(\frac{1}{27}\right)^{x-3} \quad N9$$

$$3^{4x+4} = (3^{-3})^{(x-3)}$$

$$3^{4x+4} = 3^{(-3x+9)}$$

$$4x+4 = -3x+9$$

$$10x = 5$$

$$x = \frac{5}{10} = \frac{1}{2}$$

$$2^{8x-4} \cdot 16^{3x-5} = 16^{9x+2} \quad N10$$

$$2^{8x-4} \cdot (2^4)^{(3x-5)} = (2^4)^{9x+2}$$

$$2^{8x-4} \cdot 2^{12x-20} = 2^{36x+8}$$

$$2^{8x-4+12x-20} = 2^{36x+8}$$

$$2^{20x-24} = 2^{36x+8}$$

$$20x-36x = 8+24$$

$$-16x = 32$$

$$x = -2$$