



$$3 \cdot 2^x = 24 \quad (70)$$

$$2^x = 8$$

$$\boxed{x = 3}$$

$$3^x + 3^x = 18 \quad (75)$$

$$t + t = 18$$

$$\text{---} \quad x = 2$$

$$2t = 18 \quad | : 2$$

$$t = 9$$

$$3^x = 9$$

$$3^x = 3^2$$

$$5^x + 5^{x+1} = 30 \quad (80)$$

$$\begin{aligned} 5^x + 5^x \cdot 5 &= 30 \quad | \quad 5^x = 5 \\ t + t \cdot 5 &= 30 \quad \boxed{x = 1} \end{aligned}$$

$$t + 5t = 30$$

$$6t = 30$$

$$t = 5$$

$$q^{x+2} - q^{x+1} = 72 \quad (85)$$

$$9^x \cdot 9^2 - 9^x \cdot 9^1 = 72$$

$$t \cdot 9^2 - t \cdot 9^1$$

$$81t - 9t = 72$$

$$72t = 72 \quad | : 72$$

$$t = 1$$

$$q^x = 1$$

$$\boxed{x = 0}$$

$$9^x = 1$$

↙ ↘ ↗

$$9^0 = 1$$

$$1 = 1$$

$$5^x + 2 \cdot 5^{x-1} = 175 \quad (90)$$

$$5^x + 2 \cdot 5^{x-1} = 175$$

$$\textcircled{5} \cdot 5^x + 2 \cdot 5^x \cdot 5^{-1} = 175$$

$$5^x + 2 \cdot 5^{x-1} = 175$$

$$5^x + 2 \cdot 5^{x-1} = 175$$

$$5^x + 2 \cdot 5^{x-1} = 175$$

$$5^x = 125$$

$$5^x = 5^3$$

$$\boxed{x = 3}$$

$$4^x + 4^{x-1} = \frac{3}{4} \quad (95)$$

$$4^{x+\frac{3}{2}} + 4^{x+1} = \frac{3}{4}$$

$$4^x \cdot 4^{\frac{3}{2}} + 4^x \cdot 4^1 = \frac{3}{4}$$

$$4^x \cdot 8 + 4^x \cdot 4^1 = \frac{3}{4} \quad 4(3t) = \frac{3}{4} \quad | :4$$

$$t \cdot 8 + t \cdot 4 = \frac{3}{4}$$

$$8t + 4t = \frac{3}{4}$$

$$12t = \frac{3}{4} \quad | :12$$

$$3t = \frac{3}{16}$$

$$t = \frac{1}{16}$$

$$4^x = 16^{-1}$$

$$4^x = 4^{-2}$$

$$\boxed{x = -2}$$

$$7^{-x+1} - 6 \cdot 7^{-x} - 7^{-x-1} = \frac{6}{7} \quad (100)$$

$$7^{-x+1} - 6 \cdot 7^{-x} - 7^{-x-1} = \frac{6}{7}$$

$$t \cdot 7 - 6 \cdot t - t \cdot 7^{-1} = \frac{6}{7}$$

$$t \cdot 7 - 6 \cdot t - t \cdot t = \frac{6}{7}$$

$$7t - 6t - \frac{1}{7}t^2 = \frac{6}{7}$$

$$\frac{6}{7}t = \frac{6}{7}$$

$$\frac{6}{7}(7^{-x}) = \frac{6}{7} \quad | \cdot \frac{7}{6}$$

$$7^{-x} = 1$$

$$\boxed{X = 0}$$

$$5 \cdot 6^x - 3^{x+1} \cdot 2^x = 72 \quad (105)$$

$$5 \cdot 6^x - 3^{x+1} \cdot 2^x = 72$$

$$5 \cdot 3^x \cdot 2^x - 3^x \cdot 3 \cdot 2^x = 72$$

$$5 \cdot t - 3t = 72$$

$$2t = 72 \div 2$$

$$t = 36$$

$$3^x \cdot 2^x = 36$$

$$6^x = 36$$

$$6^x = 6^2$$

$$\boxed{x = 2}$$