



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

$$2^x = 8$$

$$\boxed{x = 3}$$

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

$$t + t = 18$$

$$\textcircled{x = 2}$$

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

$$t = 9$$

$$3^x = 9$$

$$3^x = 3^2$$

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

$$5^x + 5^x \cdot 5 = 30 \quad / \quad 5^x = 5$$

$$t + t \cdot 5 = 30 \quad \boxed{x=1}$$

$$t + 5t = 30$$

$$6t = 30$$

$$t = 5$$

$$9^{x+2} - 9^{x+1} = 72 \quad (85)$$

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

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

$$81t - 9t = 72$$

$$72t = 72 \quad /: 72$$

$$t = 1$$

$$9^x = 1$$

$$\boxed{x=0}$$

$$9^x = 1$$

$$9^0 = 1$$

$$1 = 1$$

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

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

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

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

$$t + \frac{2}{5}t = 175$$

$$1\frac{2}{5}t = 175$$

$$t = 125$$

$$5^x = 5^3$$

$$\boxed{x = 3}$$

$$4^{x+\frac{1}{2}} + 4^{x+1} = \frac{3}{4} \quad (95)$$

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

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

$$4^x \cdot 8 + 4^x \cdot 4 = \frac{3}{4}$$

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

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

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

$$4(3t) = \frac{3}{4} \quad / : 4$$

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{x = 0}$$

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

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

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

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

$$2t = 72 \quad \therefore 2$$

$$t = 36$$

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

$$6^x = 36$$

$$6^x = 6^2$$

$$x = 2$$