

$$1! \cdot 1 + 3! \cdot 4 + 5! = 120 = 1 \quad 2! \cdot 2 + 4! = 24 + 4! = 24 + 24 = 48$$

$$7 \times 4 = 28 \rightarrow \boxed{2}$$

$$\text{الف) } (\sqrt{1+\sqrt{5}})^2 \rightarrow (1+\sqrt{5})^2 \rightarrow 1+2\sqrt{5} \times \sqrt{\frac{1}{4+5}} = \sqrt{5} \quad (2)$$

$$\text{ب) } \frac{(\sqrt{2}+\sqrt{5})}{\sqrt{2}-\sqrt{5}(\sqrt{5}+\sqrt{2})} \times (\sqrt{3}-\sqrt{5}-\sqrt{2+\sqrt{5}}) = \frac{\sqrt{4-2\sqrt{5}}}{(\sqrt{5}-1)^2} - \frac{\sqrt{4+2\sqrt{5}}}{(\sqrt{5}+1)^2}$$

$$\boxed{-1} = \frac{\sqrt{5}-1-\sqrt{5}-1}{2}$$

$$\text{الف) } \frac{2\sqrt{2}+2\sqrt{3}}{\sqrt{5}-\sqrt{4}} \times \frac{\sqrt{5}+\sqrt{4}}{\sqrt{5}+\sqrt{4}} = \frac{12(\sqrt{2}+\sqrt{3})}{25-4} = \sqrt{2}+\sqrt{3} \quad (3)$$

$$-2 \left(\frac{1}{\sqrt{2}-1} \right) \times \frac{\sqrt{2}+1}{\sqrt{2}+1} = \frac{-2(\sqrt{2}+1)}{1} = -(\sqrt{2}+1)$$

$$\rightarrow \sqrt{2}+\sqrt{3}-\sqrt{3}-1 = \sqrt{2}-1$$

$$\text{ب) } \frac{2\sqrt{2}-1}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2-\sqrt{3}} = \sqrt{3}-1 \quad \left\{ \frac{1}{2-\sqrt{3}} \times \frac{2+\sqrt{3}}{2+\sqrt{3}} = \frac{2+\sqrt{3}}{4-3} = 2+\sqrt{3} \right.$$

$$\sqrt{3} + \sqrt{3} + 2 - 1 = 2\sqrt{3} - 1$$

$$\text{الف) } \left(\frac{\sqrt{1+\sqrt{3}} + \sqrt{3}-1}{\sqrt{\sqrt{3}-\sqrt{2}}} \right)^2 - 2 = \frac{1+\sqrt{3}+\sqrt{3}-1+2\sqrt{2}}{\sqrt{3}-\sqrt{2}} = \frac{2\sqrt{3}+2\sqrt{2}}{\sqrt{3}-\sqrt{2}} \quad (4)$$

$$\frac{2(\sqrt{3}+\sqrt{2})}{\sqrt{3}-\sqrt{2}} \times \frac{(\sqrt{3}+2)}{(\sqrt{3}+2)} = \frac{2(\sqrt{3}+2)^2}{3-2} = 2(\sqrt{3}+2)^2 = 4\sqrt{3}+16$$

$$\sqrt{4\sqrt{3}+16} = \sqrt{(2+\sqrt{3})^2} = 2+\sqrt{3}-2 = \sqrt{3}$$

$$\text{ب) } \frac{1}{1} \times \frac{1}{1} \times \frac{1}{1} \times \frac{1}{1} = \frac{1}{1} \times \frac{1}{1} = 1 \times 1 = 1 \times 1 = 1$$

$$\frac{2^2(1+3+9+27+81+243)}{2^{2+1}(1+2+4+8+16+32)} = \frac{2^2 \times 3^5}{2^3 \times 4 \times 4} = 27 \Rightarrow 2^2 = 2 \quad (5)$$

$$\boxed{2}$$

$$a^r + b^r \cdot t \rightarrow (t - rab)^r (t + rab)^r = (t^r - ta^r b^r)^r \rightarrow (a^r + b^r + \frac{ra^r b^r - ta^r b^r}{-ra^r b^r})^r \rightarrow (a^r - b^r)^r \rightarrow (\sqrt{\sqrt{4} - 2} - \sqrt{\sqrt{4} + 2})^r \quad (4)$$

$$\left((a + \frac{1}{a})^r - r\right)^r \cdot r^t \quad a = \sqrt[r]{v + t\sqrt{r}} \Rightarrow a^r = v + t\sqrt{r} \Rightarrow \frac{1}{a^r} = \frac{1}{v + t\sqrt{r}} \quad (5)$$

$$\left((a^r + \frac{1}{a^r}) - r\right)^r = a^r + \frac{1}{a^r} + r = r^t \rightarrow v + t\sqrt{r} + \frac{1}{v + t\sqrt{r}} + r = r^t$$

$$\frac{t^2 + t - 24\sqrt{r} + 1 + 1t - 1\sqrt{r}}{v - t\sqrt{r}} = \frac{11r - 4t\sqrt{r}}{v - t\sqrt{r}} = \frac{14(v - t\sqrt{r})}{(v - t\sqrt{r})} = r \Rightarrow t = r$$

$$A = r^{\frac{r}{r}} \times r^{\frac{r}{r}} = r^{\frac{r}{r}} = r \Rightarrow (\wedge)^{-\frac{1}{r}} \rightarrow (r)^{-\frac{1}{r}} = \boxed{\frac{1}{r}} \quad (6)$$

$$\frac{1}{a^v} = r v \times a^{\frac{1}{v}} \rightarrow 1 = r v \times a^{\frac{1}{v}} \rightarrow 1 = r v \times a^r \rightarrow a = \frac{1}{r v} \quad (7)$$

$$\frac{(\frac{1}{a} - r)}{\sqrt{r} + 1} \rightarrow \frac{r\sqrt{r} - r}{\sqrt{r} + 1} \times \frac{\sqrt{r} - 1}{\sqrt{r} - 1} \rightarrow \frac{r(\sqrt{r} - 1)^2}{r} = \frac{r \times r(1 - \sqrt{r})}{r} = \boxed{4 - r\sqrt{r}}$$

$$(\sqrt{x+a} - \sqrt{x-t})(\sqrt{x+a} + \sqrt{x-t}) = (x+a - x+t) = r(\sqrt{x+a} + \sqrt{x-t}) \quad (8)$$

$$a + t = r(\sqrt{x+a} + \sqrt{x-t}) \rightarrow \frac{a}{r} + r = \sqrt{x+a} + \sqrt{x-t}$$

$$\sqrt{x+a} + \sqrt{x-t} - r = \frac{a}{r} + r - r = \boxed{\frac{a}{r}}$$