

رسم گان $\rightarrow 42 = 4 \times 10 + 2 \Rightarrow$ چون از ۱۰ به بعد رقم $\Rightarrow 1 + 3! = 1 + 6 = 7$ رقم گان A

B. $r_{\text{میان}} = 2! + 4! = 2 + 24 = 26$

$$b) \left(\frac{\sqrt{r} + \sqrt{s}}{\sqrt{r}(\sqrt{s} + \sqrt{r})} \right) \left(-\sqrt{\underbrace{r - \sqrt{s}}_{-r} + \underbrace{r + \sqrt{s}}_{-r} - r\sqrt{r}} \right) = \frac{-\sqrt{r}}{\sqrt{r}} = \boxed{-1}$$

الف) $\frac{\sqrt{a} + \sqrt{b}}{a - \sqrt{b}} - 2(\sqrt{a} - 1)^{-1}$

$\frac{2\sqrt{a} + 2\sqrt{b}}{a - \sqrt{b}} \times \frac{a + \sqrt{b}}{a + \sqrt{b}} = \frac{10\sqrt{a} + 4\sqrt{b} + 15\sqrt{a} + 9\sqrt{b}}{19} = \frac{19\sqrt{a} + 19\sqrt{b}}{19} = \sqrt{a} + \sqrt{b}$

$\frac{2\sqrt{a} + 2\sqrt{b}}{a - \sqrt{b}} - 2(\sqrt{a} - 1)^{-1} = \sqrt{a} + \sqrt{b} - 2$

$$\text{b) } \frac{x\sqrt{x}-1}{x+\sqrt{x}} + \frac{(x+\sqrt{x})}{(x-\sqrt{x})(x+\sqrt{x})} = \frac{(x\sqrt{x}-1)(x-\sqrt{x})}{14-3} + \frac{12\sqrt{x}-9-x+\sqrt{x}}{14-3} + \frac{13\sqrt{x}-13}{14-3} = \sqrt{x}-1+x+\sqrt{x} = 1+2\sqrt{x}$$

الف) $\left(\frac{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}}{\sqrt{\sqrt{3}} - \sqrt{2}} \right)^2 \rightarrow A^2 = \frac{\sqrt{3} + 1 + \sqrt{3} - 1 + 2\sqrt{3-12}}{\sqrt{3} - \sqrt{2}} = \frac{2\sqrt{3} + 2\sqrt{2}}{\sqrt{3} - \sqrt{2}} = \frac{2(\sqrt{3} + \sqrt{2})}{1} = A^2$

$$\Rightarrow A = \sqrt{y}(\sqrt{y} + \sqrt{y}) = \sqrt{y} + y \Rightarrow \cancel{y} + \sqrt{y} - \cancel{y} = \boxed{\sqrt{y}} \quad \checkmark$$

ب) $\frac{A}{12} \times 2 \times \frac{1}{2} \times \frac{12}{12} = 2 \times 2 = 2 \times 2 = 2 \times 2 = 4$ ✓

$$\begin{aligned} w^x &= z \\ r^{x-r} &= t \end{aligned} \Rightarrow \frac{z + rz + rz + rz + rz + rz + rz}{t + rt + rt + rt + rt + rt + rt} = \frac{7rz}{4rt} = 2r \Rightarrow \frac{r \cancel{r} \times r^x}{4 \cancel{r} \times r^x} = \frac{9}{4} \Rightarrow \frac{9}{4}$$

$\Rightarrow x = y$

$$((a-b)^r)^r ((a+b)^r)^r = (a-b)^r (a+b)^r = (a^r - b^r)^r = (a^r + b^r - 2a^r b^r)^r$$

$$(\sqrt{4} + r + \sqrt{4} - r - r\sqrt{4-r})^r = (r\sqrt{4} - r\sqrt{r})^r = r^r + 1 - 1\sqrt{r} = r^r - 14\sqrt{r} = 14(r - \sqrt{r})$$

$$\Rightarrow t = 14$$

(y)

$$a = \sqrt[r]{(r - \sqrt{r})^r} = \sqrt{r - \sqrt{r}}$$

$$(a + \frac{1}{a} + \sqrt{r})^r (a + \frac{1}{a} - \sqrt{r})^r$$

$$(a + \frac{1}{a} + \sqrt{r})(a + \frac{1}{a} - \sqrt{r})(a + \frac{1}{a} + \sqrt{r})(a + \frac{1}{a} - \sqrt{r}) = (a^r + \frac{1}{a^r} + r - r)^r = (a^r + \frac{1}{a^r})^r$$

$$= (r - \sqrt{r} + \frac{1}{r - \sqrt{r}})^r = (r - \sqrt{r} + r + \sqrt{r})^r = r^r = 14 \Rightarrow r^t = 14 \Rightarrow t = r$$

$$A = \sqrt[r]{\frac{r}{\sqrt{r}^{10}}} \times r^{\frac{r}{r}} = r^{\frac{r}{r}} \times r^{\frac{r}{r}} = r^r = r \Rightarrow (rA)^{-\frac{1}{r}} = \sqrt[r]{\frac{1}{r}} = \frac{1}{r}$$

(y)

$$\frac{a^{\frac{1}{\sqrt{r}}}}{a^{\frac{10}{\sqrt{r}}}} = r^r \Rightarrow a^{-r} = r^r \Rightarrow \frac{1}{a^r} = r^r \Rightarrow a^r = \frac{1}{r^r} \Rightarrow a = \frac{1}{r\sqrt{r}}$$

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

$$\sqrt{x+a} = z, \sqrt{x-r} = t$$

$$z - t = r \Rightarrow z + t = y \Rightarrow z^r - t^r = ry \Rightarrow a + a - x + r = ry \Rightarrow r + a = ry$$

$$z + t - r = ? \Rightarrow r + \frac{a}{r} - r = ? \Rightarrow \text{جواب} = \frac{a}{r}$$

$$\frac{r+a}{r}$$