



$$S_{\text{ش}} - \frac{1}{3} S_{\text{م}} = 14$$

۱- گزینه ۱

$$3x \times x - \frac{1}{3} x^2 = 14 \rightarrow 3x^2 - \frac{1}{3} x^2 = 14 \rightarrow \frac{8}{3} x^2 = 14 \rightarrow x^2 = 4 \rightarrow x = \sqrt{4}$$

$$\text{عرض - طول} = 3x - x = 2x = 2\sqrt{4}$$

۲- گزینه ۴



$$\text{حدا} = (A - B) - C$$

$$f(1) = f(b) \rightarrow bc = ab^2c \rightarrow 1 = ab \rightarrow b = \frac{1}{a} \quad f(m) = \frac{1}{a}c$$

$$f(m+y) = f(m)f(y) - 1 \rightarrow \frac{1}{a}c = \frac{1}{a}c \times \frac{1}{a}c - 1 \rightarrow \frac{1}{a}c = \frac{1}{a^2}c^2 - 1 \xrightarrow{\times a} c^2 - ac - a = 0$$

$$\Delta = 1 + 4a \rightarrow c = \frac{a \pm \sqrt{1+4a}}{1} \rightarrow c = \frac{1}{1} = 1 \quad \checkmark \quad c = \frac{-1}{1} = -1$$

$$f(\sqrt{11}) = |1 - \sqrt{11}| = [-1\sqrt{11}] = -1$$

$$f(\sqrt{11}) + f(-1, \sqrt{11}) =$$

$$f(-1, \sqrt{11}) = |1 + 2 \times (-1, \sqrt{11})| = [-2\sqrt{11}] = -2$$

$$= -1 - 2 = -3$$

$$(a, 3) \quad (-1, a) \quad (1, 3a)$$

$$\left(\frac{a-3}{-1-a} \right) = \left(\frac{3a-a}{1-(-1)} = \frac{2a}{2} = a \right) = \left(\frac{3a-3}{1-a} \neq \frac{-2(1-a)}{1-a} = -2 \right) \rightarrow a = -3$$

$$f = \left\{ \left(\sqrt{2}, \frac{1}{\sqrt{2}} \right) \left(\frac{1}{\sqrt{2}}, \sqrt{2} \right) \left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2} \right) \right\}$$

$$\frac{k}{2} - 1 = \frac{1}{2} \xrightarrow{\times 2} k - 2 = 1 \rightarrow k = 3$$

$$g = \left\{ \left(\frac{1}{\sqrt{2}}, \sqrt{2} \right) \left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2} \right) \left(\sqrt{2}, \frac{1}{\sqrt{2}} \right) \right\}$$

$$\frac{n-1}{2} = -\frac{3}{2} \rightarrow n-1 = -3 \rightarrow n = -2$$

$$f-g = \left\{ \left(\frac{1}{\sqrt{2}}, \sqrt{2} \right) \left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} \right) \right\}$$

$$\rightarrow \text{مجموع سائیر} \quad 1 + (-3) + \frac{3}{2} = 1 + \frac{3}{2} = \frac{5}{2}$$

$$\underbrace{(2a+1)x^2}_A - \underbrace{(2a)x}_B + \underbrace{(2a-1)}_C = 0$$

$$A+C=B$$

۳- گزینه ۳

در یک از جواب ها +1 است. و جواب دیگر $\frac{C}{A}$

$$\frac{2a-1}{2a+1} > 0 \rightarrow \frac{2a+1-2}{2a+1} > 0 \rightarrow 1 - \frac{1}{2a+1} > 0 \rightarrow \frac{1}{2a+1} < 1$$

انتخاب

$$\rightarrow \frac{1}{2} \neq 1$$

$$\rightarrow -4 < 1 \quad \checkmark$$

$$\rightarrow 5 \neq 1$$

$$\rightarrow \frac{1}{2} \neq 1$$

$$\frac{1}{r} = \frac{1}{1} = 1 \rightarrow \frac{1}{r} = 14$$

۱۴ - نز [۴]

$$\frac{1}{5} \times \frac{4}{5} \times \frac{3}{5} \times \frac{2}{5} \times \frac{1}{5} = \frac{24}{3125}$$

۱۵ - نز [۳]

$$n(5) = \binom{4}{r} = \frac{4!}{r! \times 4!} = \frac{4 \times 3 \times 2 \times 1}{r! \times 24} = \frac{1}{r!}$$

۱۶ - نز [۲]

$$1, 2, 3 \leq 1, 2, 3 \leq 4, 5, 6 \leq 7, 8, 9 \rightarrow \text{Cub} \rightarrow P = \frac{4}{r} = \frac{1}{5}$$

$$a_r = \frac{1}{1+r a_1} = \frac{1}{1+\frac{r}{r}} = \frac{1}{\frac{2}{r}} = \frac{r}{2}$$

$$\frac{a_r}{a_r} = \frac{\frac{r}{2}}{\frac{r}{2}} = \frac{1}{1} = 1$$

۱۷ - نز [۱]

$$a_r = \frac{1}{1+r \times \frac{r}{2}} = \frac{1}{1+\frac{r^2}{2}} = \frac{1}{\frac{2+r^2}{2}} = \frac{2}{2+r^2}$$

$$S_n = \frac{n}{r} [r \times 1 + (n-1) \times r] = 4 [14 + 4 \times 4] = 140$$

۱۸ - نز [۳]

$$r \times 1 = 140$$

$$r \times 1 = \frac{n}{r} [1 + (n-1)r]$$

$$d = r$$

$$140 = n [1 + (n-1)r] = n [r + r n] = n [1 + n] \times r$$

$$n [1 + n] = 140 \rightarrow n = 10$$

$$a_r = v \rightarrow r^{v-r} = \frac{49}{v} = v \rightarrow r^r = v \rightarrow r = \sqrt{v}$$

۱۹ - نز [۴]

$$a_r = 49$$

$$v = a_1 (\sqrt{v})^r \rightarrow a_1 = \frac{v}{\sqrt{v}}$$

$$a_{11} = a_1 r^{10} = \frac{v}{\sqrt{v}} \times \sqrt{v}^{10} = \frac{v}{\sqrt{v}} \times v^{\frac{10}{2}} = v^{1+\frac{10}{2}-\frac{1}{2}} = v^{\frac{11}{2}} = 343$$

$$\frac{a^d \times r^r \times a^r}{r^r \times a^d \times a^{-d}} = a^{d+r}$$

$$\rightarrow a^1 = a^{d+r} \rightarrow a = a$$

۲۰ - نز [۱]

$$f(r) = \frac{1}{a} \times a^r - 1 = r$$