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سارا مقبول

Date Subject

مسئله ۱

$$x + y + z = 18 \quad x = 7 \quad y = 11 \quad z = 4$$

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$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} = 1$$

$$\frac{1}{2} = 4$$

$$\frac{1}{4} = 16$$

$$\frac{1}{8} = 64$$

$$q = 1 \leq 9 = 1$$

مسئله ۲

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$$x^2 + y^2 + z^2 = 18$$

$$(x^2 + y^2 + z^2)(x^2 + y^2 + z^2) = 18^2$$

$$x^4 + y^4 + z^4 = 18^2$$

$$x^4 = 18^2 \quad y^4 = 18^2 \quad z^4 = 18^2$$

$$x^2 = 18 \quad y^2 = 18 \quad z^2 = 18$$

$$\sum_{i=1}^n \frac{1}{i^2} = \frac{1}{1} + \frac{1}{4} + \frac{1}{9} + \dots$$

مسئله ۳

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$$a + aq + aq^2 + aq^3 + aq^4 = 5$$

$$S = a(1 + q + q^2 + q^3 + q^4)$$

$$S = 5$$

A

1 0 0 0 0 9 f

 $a_{1,1} \quad a_v = 9f$

$$A \cdot a_e = a_1 + r^v d \Rightarrow 1 + r^v \cdot 1 \cdot 9f = r^v \cdot 9f$$

$$(a_1 + r^v d) = 9f$$

$$9f = 9f$$

$$d = 1 \cdot 9f$$

$$A + B = 1 + r^v \cdot 9f$$

B 1 0 0 0 0 9 f

 $a_1 r^v \quad a_1 r^v = 9f$

$$B = A \quad A + B = r^v \cdot 9f + 9f$$

$$r^v = 9f \quad r = 9f$$

$$1 \times r^v = A$$

$$\frac{-10}{f} + r^v = \frac{1}{f} = d \quad a_{1,1} = a_1 + 1 \cdot r^v \cdot \left(\frac{1}{f}\right) = r^v \cdot 9f$$

$$a_{1,1} = 1 \quad b_n = a_1 r^{n-1} \quad 1 = 1 \cdot r^v \times r^v \quad r^v = \frac{1}{r^v}$$

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

 $a_r \quad a_v \quad a_q$ $a_1 + r^v d \quad a_1 + r^v d$

$$(a_1 + r^v d) (a_1 + r^v d) = (a_1 + r^v d)^v = a_1^v + \underbrace{v a_1 r^v d + \frac{v(v-1)}{2} r^{2v} d^2}_{1 \cdot a_1 d} = a_1^v + r^v d + 1 \cdot a_1 d$$

$$0 = r^v d (a_1 + 1 \cdot d) \quad a_1 = 1 \cdot d \quad d = \frac{r^v}{1}$$

$$d = 0$$

$$a_1 \quad a_2 \quad a_3 \quad a_1^r + \underbrace{r a_1 d + a_1 d + r d^r}_{\Delta a_1 d} = a_1^r + r d^r \quad \text{سوال 4a, d}$$

$$a_1 + d \quad a_1 + r d \quad a_1 + r d$$

$$\downarrow$$

$$r d$$

$$\downarrow$$

$$r d$$

$$\downarrow$$

$$r d$$

$$\frac{r d}{r d} = r$$

$$r a_1 d - r d^r = 0$$

$$r d (a_1 - d) = 0$$

$$a_1 = d, \quad d = 0$$

$$a_1 = a q^q \Rightarrow \frac{1}{r} \times r^q = \frac{a q^q}{r} = 1 r a$$

$$r a_1 \quad r a_2 \quad a_1$$

$$r(a_1) \quad r(a_2) \quad a_1 q^r$$

$$r a_1 q^r = a (r a_1 + a_1^r)$$

$$r a_1 q^r = r a_1 + a_1^r$$

$$r a_1 = r + a_1^r$$

$$q^r - r a_1 + r = 0$$

$$q = \frac{r + \sqrt{r}}{r} \quad \checkmark \quad r = r$$

$$r, \frac{1}{r}, \dots$$

$$\frac{1}{r} - r = -\frac{1}{r}$$

$$a_n = -\frac{1}{r} n + r \frac{1}{r} \quad \text{سوال 9}$$

$$a_1 = -\frac{1}{r} \times 1 + \frac{r}{r} = 1 \frac{1}{r} = \frac{r}{r}$$

$$-r \quad -1$$

$$\frac{r}{r} + n = \frac{1}{r} + n = -1 + n$$

$$a_n = -\frac{1}{r} \times n + \frac{r}{r} = \frac{1}{r}$$

$$a_{12} = -\frac{1}{r} \times 12 + \frac{r}{r} = -1$$

$$(-1+n)(\frac{r}{r}+n) = \frac{1}{14} + n^2 + \frac{1}{r} n$$

$$-\frac{r}{r} - n + \frac{r}{r} n + r n^2 = \frac{1}{14} + r n^2 + \frac{1}{r}$$

$$r, r d, r, r d$$

$$n = -\frac{1}{r}$$

$$\frac{1}{r} (\frac{r}{r} + n) = \frac{r}{14} + \frac{1}{r} n$$

$$q_1 + a_1 + a_1 v = v r$$

سوال ۱

$$q = r$$

$$a_1 + a_1 q^r + a_1 q^4 = v r$$

$$r a = v r \quad a = \frac{v r}{r}$$

(115)

$$a q^r - a = d \rightarrow \frac{v r}{r} - \frac{v r}{r} = d$$

$$d = 0$$

$$a r - a_1 = b r - b_1 = d$$

$$a v - a_1 = b v - b_1 = d$$

$$\frac{a(q^r - 1)}{a(q^4 - 1)} = \frac{d}{q d} \rightarrow q^{r+1} = q \rightarrow q = r \quad (1)$$

$$a + a q^4 + a q^4 = a + a + 4 a = v r a \rightarrow a = 1$$

$$a r - a_1 = d \rightarrow (1 \times r) - 1 = v \rightarrow d = v$$

$$(P) q = 1 \rightarrow v a = v r \rightarrow a = \frac{v r}{r}$$

$$d = \frac{v r}{r} - \frac{v r}{r} = 0$$