

تفاضل دوم درجه اول

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$$a + r = 41 \Rightarrow 15 + r = 41 \quad r = 26 \quad d = 7$$

$$a + (n-1)d = 41 \quad 41 + r - 7 = 41 \Rightarrow r = 7 \quad n = 26$$

$$n = 26$$

(1)

$$100 \leq r + r \leq 999$$

$$99 \leq r \leq 999$$

$$15r - 15 = 114$$

(2)

$$\frac{99}{7} \leq n \leq \frac{999}{7}$$

$$r = 7$$

$$a_{n+1} = a + nd$$

$$a_{n+r} = a + (n+1)d$$

$$a_{n+r} = a + (n+1)d$$

(1)

$$a_{11} = -2 \times 11 + 15 = -22 + 15 = -7$$

$$a_{11} = -2 \times 11 + 15 = -22 + 15 = -7$$

$$a_{11} - a_{10} = a_{11} - a_{10}$$

$$a_{11} + a_{10} = 15a_{10}$$

$$a_{n+1} + a_{n+r} + a_{n+1} = a + nd + a + nd + a + nd = 3a + 3nd = 3a + 3(n+1)d$$

$$3a + 3(n+1)d = 3a + 3(n+1)d$$

$$3a + 3(n+1)d = 3a + 3(n+1)d$$

$$a_{11} - a_{10} = -7 - (-14) = 7$$

$$(a_{11} - a_{10}) + (a_{10} - a_{9}) = 7 + 7 = 14$$

$$(-14 - 7) + (-7 - 14) = -21 - 21 = -42$$

$$a_{11} + a_{10} = -21$$

$$15 - 15 + (15 - 1) = 15 \times 15^{10} \Rightarrow 15 + 15 = 30$$

$$a = 15 \quad r = 15$$

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$$a_{11} = 15$$

$$15 + 15 = 30$$

$$a + r = 41 \Rightarrow 15 + r = 41 \Rightarrow r = 26$$

$$a_{11} - a_{10} = -7$$

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$$a_{11} - a_{10} = -7$$

$$a_{11} - a_{10} = -7$$

$$(t_9 - t_0)(t_9 + t_0) = 10(15 + 10) = 250$$

$$t_9 - t_0 = 10 \Rightarrow \frac{10}{10} = 1 \Rightarrow 1 = 1$$

$$r = 7$$

$$d = \frac{b-a}{k+1}$$

$$d = \frac{r_1 \sqrt{r} - r + 1 \sqrt{r}}{r+1} = \frac{r \sqrt{r}}{r+1} \quad \boxed{\sqrt{r}} \quad \text{②} \quad \checkmark$$

$$d = \frac{b-a}{k+1}$$

$$d = \frac{r-r}{r_{n-r}+1} = \frac{r_0}{r_n-r} = \frac{1d}{r_{n-1}}$$

$$a_{n+1} = a + nd = r + n \left(\frac{1d}{r_{n-1}} \right) = 11$$

$$n \left(\frac{1d}{r_{n-1}} \right) = 9 \quad 1d n = 9(r_{n-1}) = 11n - 9$$

$$1d n = 11n - 9$$

$$\frac{-r_n}{-r} = \frac{-9}{-r} \Rightarrow \boxed{n=r}$$

$$a_n + a_{n+r} = a_k + a_{11}$$

$$a + (n-1)d + (a + (n+r)d) = a + rd + a + 11d \Rightarrow ra + (r_n+r)d = ra + 11d$$

$$r_n d + r d = 11d$$

$$r_n d - 11d = 0$$

$$rd(n-1) = 0$$

$$a + (k-1)d = 0$$

$$-d + kd = 0$$

$$-rd + kd = 0$$

$$d(-r+k) = 0$$

$$\boxed{k=r}$$

$$a_n = r a_r \Rightarrow a + rd = r(a + rd)$$

$$a + rd = ra + rd$$

$$-ra = rd \Rightarrow a = -d$$