

$$a + aq + aq^2 = 21 \quad a(1 + q + q^2) = 21 \quad -1$$

$$a \times aq \times aq^2 = 95 \quad a^3 q^3 = 95 \rightarrow aq = 5$$

$$\frac{21q}{1+q+q^2} = 5 \quad 21q = 5 + 5q + 5q^2 \quad 5q^2 - 16q + 5 = 0$$

$$q = \frac{16 \pm \sqrt{(-16)^2 - 4 \times 5 \times 5}}{2 \times 5} = \frac{16 \pm 10}{10} = 5/5 \rightarrow q = \frac{1}{5} \quad (q \neq 1)$$

$$aq = 5 \rightarrow \boxed{q = \frac{1}{5}} \rightarrow a = 25 \rightarrow \boxed{25, 5, 1, \dots} \quad q = \frac{1}{5}$$

$$\frac{x^2 + 5}{x} = \frac{2x}{x^2 + 5}$$

$$\frac{x^2 - 2}{2x} = \frac{2x}{x^2 + 5}$$

$$x^4 + 5x^2 - 1 = 2x^3 \quad -2$$

$$x^4 - 2x^3 - 1 = 0$$

$$x^2 = \frac{2 \pm \sqrt{36}}{2} = \frac{2 \pm 6}{2} = 4/-2 \rightarrow x^2 \geq 0 \Rightarrow x^2 \neq -2 \rightarrow x^2 = 4 \rightarrow x = \pm 2$$

$$x = 2 \rightarrow 1, 5, 2, \dots \checkmark \rightarrow S_v = \left(\frac{1 - \left(\frac{1}{2}\right)^v}{1 - \frac{1}{2}} \right) a = 1 \left(\frac{\frac{12V}{12A}}{\frac{1}{2}} \right) = \boxed{\frac{12V}{1}} \checkmark$$

$$x = -2 \rightarrow 1, -5, 2, \dots \times$$

$$S_\infty = a + aq + aq^2 + aq^3 + aq^4 = a(1 + q + q^2 + q^3 + q^4) = 25 \times 3 \times \frac{12}{1} \quad -3$$

$$= \boxed{900} \checkmark$$

$$1, a_2, a_3, a_4, a_5, a_6, 95 \quad d = \frac{95 - 1}{5} = \frac{94}{5} = 18.8 \quad -4$$

$$a_5 = 1 + 4d = 1 + 4(18.8) = \boxed{76.2}$$

$$1, g_2, g_3, g_4, g_5, g_6, 95 \quad g^2 = 95 \rightarrow g = 95^{\frac{1}{2}} = 9.746 \quad -5$$

$$g_5 = 1 + 4g = 1 + 4(9.746) = \boxed{39.984}$$

$$A + B = 76.2 + 1 = \boxed{77.2} \checkmark$$

$$1 \quad a + 10d = -25 + (10 \times \frac{1}{r}) = 20 - 25 = 1 \quad -c$$

$$2 \quad aq^v = 1 \rightarrow a = 121 \quad q^v = \frac{1}{121} \rightarrow \boxed{q = \frac{1}{r}} \checkmark$$

3

$$4 \quad \begin{array}{cc} a+2d, a+4d, a+6d & \frac{a+4d}{a+2d} = \frac{a+6d}{a+4d} \end{array} \quad -y$$

5

$$6 \quad a^x + 10ad + 14d^x = a^x + 14d^x + 10ad \quad 10d^x + 14ad = 0$$

$$7 \quad 2d(10d+a)=0 \rightarrow d=0/a+10d=0 \rightarrow d = \frac{-a}{10} \Rightarrow \boxed{d=0/-\frac{a}{10}} \checkmark$$

8

$$9 \quad \begin{array}{cc} a+d, a+3d, a+5d & \frac{a+3d}{a+d} = \frac{a+5d}{a+3d} \end{array} \quad -v$$

10

$$11 \quad a^x + 9d^x + 4ad = a^x + 14ad + vd^x \quad 2d^x - 14ad = 0 \quad 2d(d-a)=0$$

$$12 \quad \Rightarrow d=0/d=a \rightarrow 2a, 4a, 1a \rightarrow \frac{4a}{2a} = \frac{1a}{4a} = \frac{1}{2}$$

↓
جملات متوازن ہوتے ہیں

$$14 \quad a_{10} = aq^9 = \frac{1}{r} \times r^9 = r^8 = \boxed{121} \checkmark$$

15

$$16 \quad \begin{array}{cc} 2aq = a-d & aq^3 - 2aq^2 = 2aq^2 - 2aq \end{array} \quad -1$$

$$17 \quad \begin{array}{cc} 2aq^2 = a & aq(q^2 - 2q) = aq(2q - 3) \end{array}$$

$$18 \quad \begin{array}{cc} aq^3 = a+d & q^2 - 2q = 2q - 3 \end{array}$$

$$19 \quad q^2 - 4q + 3 = 0$$

$$20 \quad (q-1)(q-3) = 0 \Rightarrow \boxed{q=1/q=3} \checkmark$$

$$\frac{a_1 r + k}{a_1 + k} = \frac{a_1 + k}{a_1 + k} \Rightarrow \frac{-1 + k}{\frac{1}{r} + k} = \frac{\frac{a}{r} + k}{\frac{a}{r} + k} \quad 9$$

$$a + r d = r + \left(-\frac{1}{r}\right) \times r = r - \frac{r}{r} = \frac{a}{r}$$

$$a + v d = r + \left(-\frac{1}{r}\right) \times v = r - \frac{v}{r} = \frac{1}{r}$$

$$a + r d = r + \left(-\frac{1}{r}\right) \times r = r - \frac{r}{r} = r - r = -1$$

$$k + \frac{1}{r} k - \frac{a}{r} = k + \frac{1}{14} + \frac{1}{r} k \Rightarrow \frac{1}{r} k = -\frac{r}{14} \Rightarrow k = -\frac{r}{14}$$

$$r = \frac{a_1 r + k}{a_1 + k} = \frac{-1 - \frac{r}{14}}{\frac{1}{r} - \frac{r}{14}} = \frac{-\frac{r}{14}}{-\frac{a}{r}} = \frac{r a}{r a} = \boxed{\frac{a}{r}} \checkmark$$

$$a + a q^r + a q^s = v r \quad a(1 + q^r + q^s) = v r \quad 10$$

$$a = a$$

$$d = a q^r - a = a(q^r - 1)$$

$$a q^r = a + d$$

$$a q^s = a + 9a(q^r - 1) = a(1 + 9q^r - 9) = a(9q^r - 8)$$

$$a q^s = a + 9d$$

$$q^s = 9q^r - 1$$

$$q^r = t \rightarrow t^r - 9t + 1 = 0 \rightarrow (t-1)(t-1) = 0$$

$$t=1 \rightarrow q^r = 1 \rightarrow q = 1 \rightarrow a = a_1 = a_v \rightarrow r a = v r \rightarrow a = \frac{v r}{r} \rightarrow d = a(q^r - 1) = 0$$

$$t=1 \rightarrow a(1+1+9t) = v r a = v r \rightarrow a = 1 \rightarrow d = a(q^r - 1) = 1(1-1) = 0$$

$$\Rightarrow \boxed{d=0 \text{ or } d=v} \checkmark$$