

$$r(a+d)^r = ar^r + r \cdot ad = r(a+d) \rightarrow r(a^r + d^r + rad) = ar^r + 1 \cdot ad + r a^r + rad \quad -4$$

$$ra^r + ad - ad^r = \dots \rightarrow r \left(\frac{a}{d} \right)^r + \frac{a}{d} - r = 0 \rightarrow \boxed{\frac{a}{d} = r}$$

$$ra^r + r = r \rightarrow a + b^r - r = 1 - r(r)(-r) = r \rightarrow r = \frac{-1 \pm \sqrt{1+4r}}{2} \rightarrow \frac{r}{r} = \frac{r}{r}$$

$$\frac{a}{d} = \frac{a}{d} + r \xrightarrow{①} r + \frac{r}{r} = \frac{a}{r} \xrightarrow{②} r - r = 1$$

$$b, b+d, b, b+d \rightarrow \text{ans: } b, \frac{b-d}{r}, \frac{b+d}{r} \quad -v$$

$$\frac{b+d}{\frac{b-d}{r}} = \frac{b+d}{r(b-d)} = \frac{b-d}{rb}, \quad r(b-d)^r = rb^r + rbd \rightarrow rd^r = rbd \rightarrow d = rb$$

$$\Rightarrow b, -\frac{rb}{r}, \frac{rb}{r} = b, -b, b, \dots \rightarrow \boxed{r = -1} \rightarrow r(r) = r(-1) = -r$$

$$a, b, c \rightarrow \frac{b}{r}, b, br \rightarrow rb, \frac{rb}{r}, br \quad \frac{rb}{r} - rb = br - \frac{rb}{r} \rightarrow \frac{rb - rbr}{r} = \frac{br - rb}{r} \quad -1$$

$$rb = br^r + rbr \rightarrow r^r, rr = r \rightarrow r^r + rr - r = 0 \rightarrow (r+r)(r-1) = 0 \rightarrow r = -1 \text{ or } r = 1$$

$$\frac{ar^d}{(ar)^r} + \frac{ar}{ar} = r \rightarrow \frac{r^r}{ar} + \frac{r}{a} = r \rightarrow \frac{r^r + ar}{ar} = r \rightarrow r^r + ar = ra^r \quad -9$$

$$n = \frac{1}{\frac{a}{r}} = \frac{r}{a} \rightarrow r^r + n = r \Rightarrow r^r + \frac{r}{a} - r = 0 \rightarrow (n+r)(n-1) = 0$$

$$\left. \begin{array}{l} r=1 \rightarrow a=r \\ n=-r \rightarrow \frac{r}{a} = -r \rightarrow \frac{a}{r} = -\frac{1}{r} \end{array} \right\} \Rightarrow \frac{a}{r} = -\frac{1}{r} = -1$$

$$a = ar^r = rV \quad (\sqrt{ar^r} = ar^r) \xrightarrow{\frac{0.5r}{r}} (ar^r)^r = (ar^r) \rightarrow a^r r^r = ar^r \rightarrow \frac{ar^r}{ar^r} = \frac{ar^r}{ar^r} = 1 \Rightarrow a = \frac{1}{r}$$

$$ar^r = rV \rightarrow \left(\frac{1}{r} \right) r^r = rV \Rightarrow r^r = rV, \quad r=r \rightarrow a = \frac{1}{r}, \quad \frac{1}{r} - \frac{1}{r} = \frac{1}{r}$$

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