

$$\Sigma - \frac{1}{2r} \geq 0 \rightarrow \Sigma \geq \frac{1}{2r} \rightarrow \Sigma n^r \geq 1 \rightarrow n^r \geq \frac{1}{\Sigma} \rightarrow n \geq \frac{1}{r} \leq n \leq -\frac{1}{r}$$

$$\rightarrow \boxed{(-\infty, -\frac{1}{r}] \cup [\frac{1}{r}, \infty)}$$

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$$\Delta = \Sigma m^r \cdot \Sigma m^r m(m-1) \rightarrow \frac{0}{+r-r} \xrightarrow{\Delta} \begin{cases} [0, 1] \\ m > 0 \end{cases}$$

$$\boxed{[0, 1]}$$

← $\int_0^1 R(x) dx, f(x) = 1$ ← $\int_0^1 x^n dx$

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$$n = \frac{1}{r} \rightarrow r + k = r \rightarrow k = 0$$

$$(a-1) = 0 \rightarrow a = 1$$

$$\rightarrow a + k = \boxed{\frac{1}{r}}$$

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$$n = \frac{r}{r} \rightarrow -ra + r = -r + b \rightarrow b + ra = \Sigma \xrightarrow{b=r} ra = r \rightarrow a = 1$$

$$n = 1 \rightarrow \frac{r-\Sigma}{r+r} = kb \rightarrow b = -r$$

$$\rightarrow a - b = r - (-r) = \boxed{2r}$$

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$$n = r \rightarrow ra^r + ra = \Sigma \rightarrow a^r + a - r = 0 \rightarrow (a+r)(a-1) = 0 \rightarrow \boxed{a = -r}$$

$$\hookrightarrow \boxed{a = 1}$$

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