

$$N = 282 = 2 \cdot 3 \cdot 47$$

By the Ibukiyama-Kitayama dimension formula,
 $\dim(S_4(K(282))) = 197$

By the Skoruppa-Zagier dimension formula and Jacobi restriction,
the lift dimension of $S_4(K(282))^+$ is 49
the nonlift dimension of $S_4(K(282))^+$ is heuristically 104
 $\dim(S_4(K(282))^+)$ thus is heuristically 153
 $\dim(S_4(K(282))^-)$ is heuristically 44

$\dim(J_{\{2,282\}}^{\{\text{cusp}\}}) = 5$ (Skoruppa-Zagier), so need to span to within 4 dimensions

$q = 5$ for TraceDown

After TD(Grit($J_{\{4,1410\}}^{\{\text{cusp}\}}$)) and ($\text{Grit}(J_{\{2,282\}}^{\{\text{cusp}\}})^2$),
spanned rank in $S_4(K(282))^+$ is 151
spanned rank in $S_4(K(282))^-$ is 0

Hecke operators applied: $\{\{2, 2\}, \{2, 2\}, \{2, 1\}\}, \{\{3, 2\}, \{2, 2\}, \{3, 1\}\}$
After Hecke spreading,
spanned rank in $S_4(K(282))^-$ is 27

After Borcherds products,
spanned rank in $S_4(K(282))^-$ is 41

Final spanned rank in $S_4(K(282))^+$ is 151
Final spanned rank in $S_4(K(282))^-$ is 41

$S_2(K(282))$ is determined by Jacobi restriction and the $H4Ndl(2)$ test
($\dim(H_4(282,2,1)) \leq 5$ and this is less than $\dim(J_{\{2,282\}}^{\{\text{cusp}\}})+1 = 6$)

So $S_2(K(282)) = \text{Grit}(J_{\{2,282\}}^{\{\text{cusp}\}})$ (dimension 5)