

Figure 1: timing-pattern

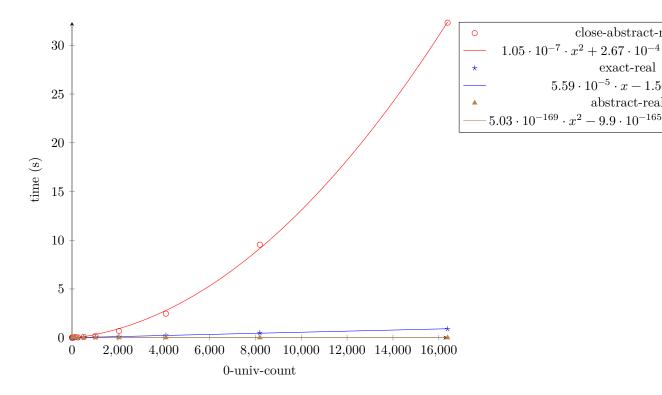


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$

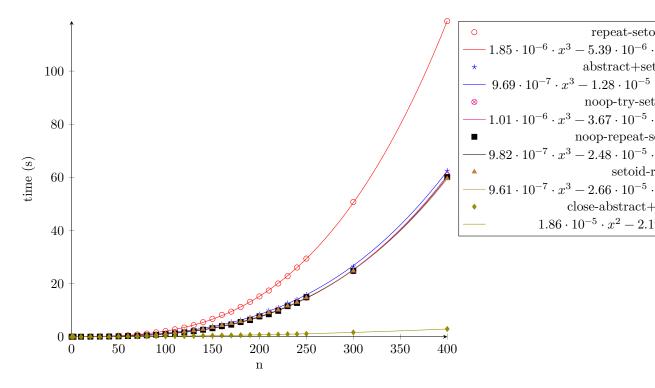


Figure 3: timing-repeat-setoid-rewrite-under-binders

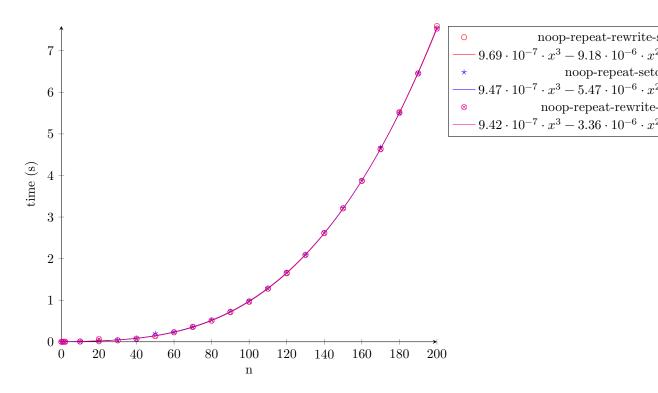
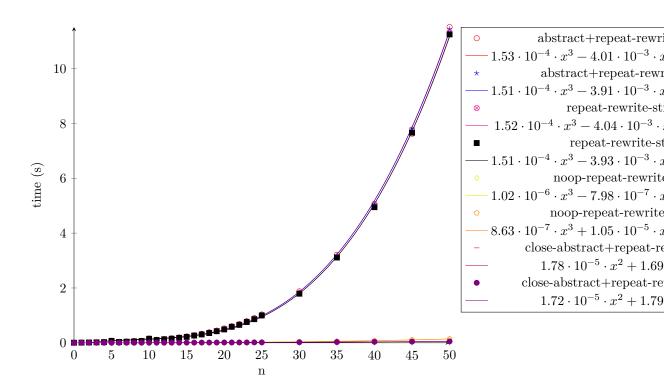
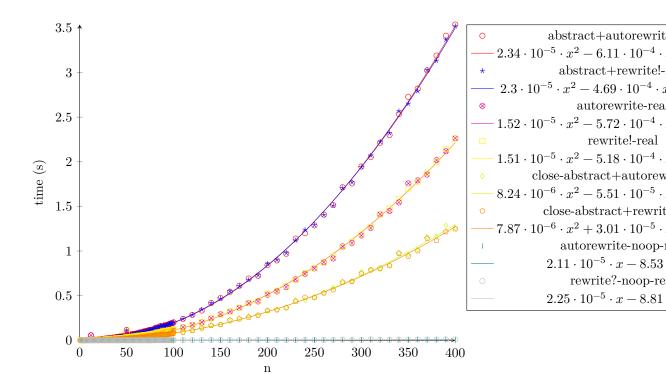


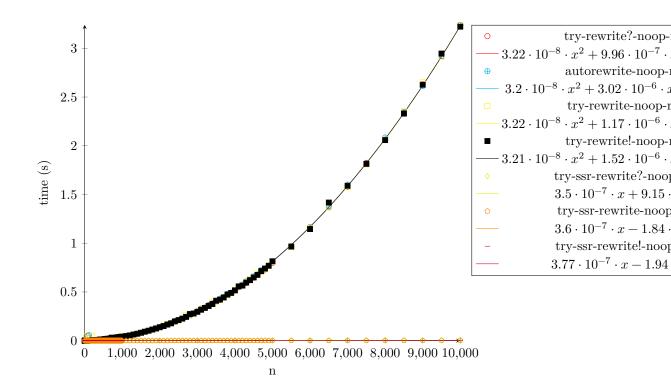
Figure 4: timing-repeat-setoid-rewrite-under-binders-noop



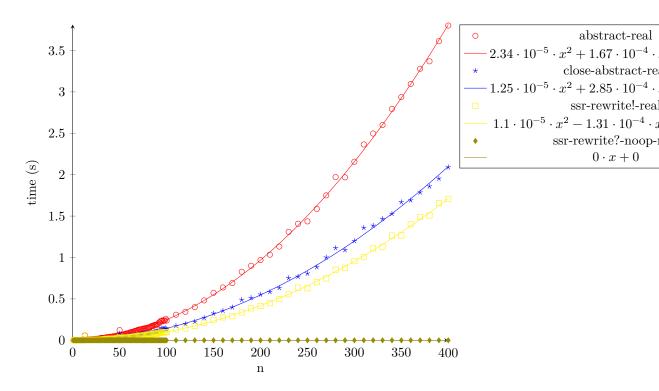
 $Figure \ 5: \ timing-rewrite-strat-under-binders$



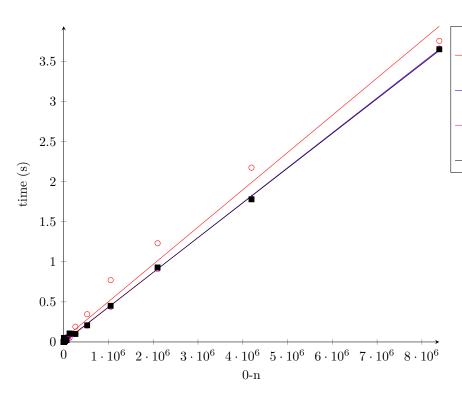
 $Figure \ 6: \ timing-rewrite-repeated-app-autorewrite \\$



 $Figure~7:~timing\mbox{-rewrite-repeated-app-autorewrite-noop}$



 $Figure \ 8: \ timing-rewrite-repeated-app-ssrrewrite \\$



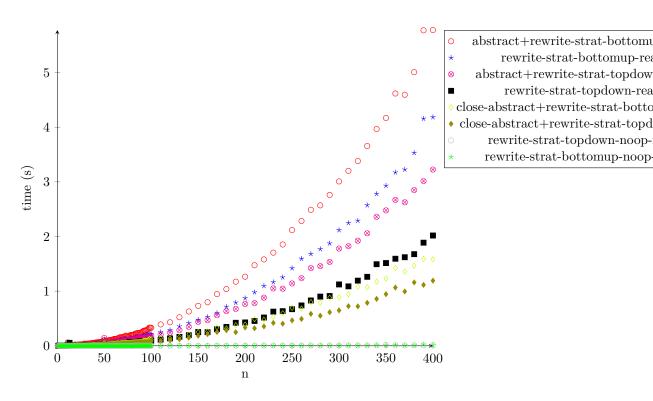
try-ssr-rewrite!-cold-noop-rea $4.65 \cdot 10^{-7} \cdot x + 3.81 \cdot 10^{-2}$

try-ssr-rewrite?-noop-real $4.35\cdot 10^{-7}\cdot x - 2.91\cdot 10^{-3}$

 $\begin{array}{l} \text{try-ssr-rewrite-noop-real} \\ 4.34 \cdot 10^{-7} \cdot x - 2.33 \cdot 10^{-3} \\ \text{try-ssr-rewrite!-noop-real} \end{array}$

 $4.33\cdot 10^{-7}\cdot x + 2.62\cdot 10^{-3}$

Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1

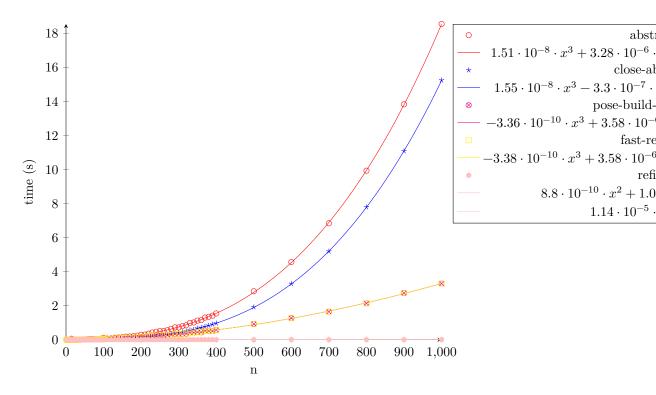


 $abstract + rewrite - strat - bottom \\ \\$ rewrite-strat-bottomup-rea

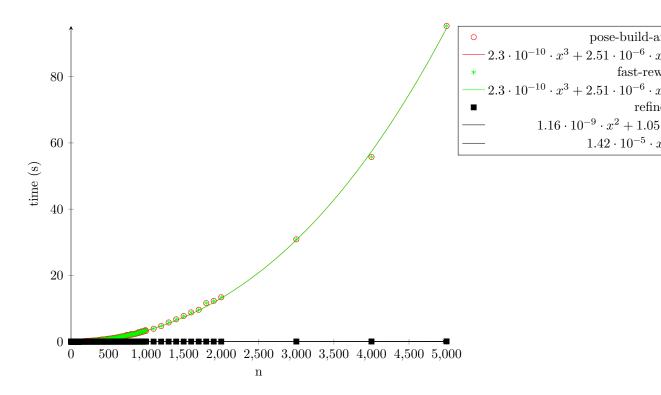
abstract + rewrite - strat - topdowrewrite-strat-topdown-rea

rewrite-strat-topdown-nooprewrite-strat-bottomup-noop-

 $Figure\ 10:\ timing-rewrite-repeated-app-rewrite-strat$



 $Figure~11:~timing\mbox{-rewrite-repeated-app-fast-rewrite}$



Figure~12:~timing-rewrite-repeated-app-fast-rewrite-no-abstract

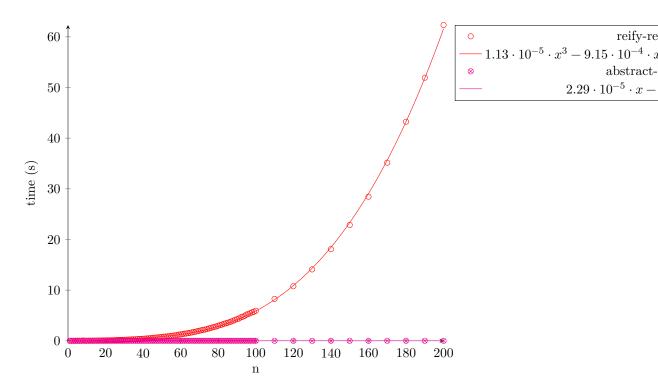
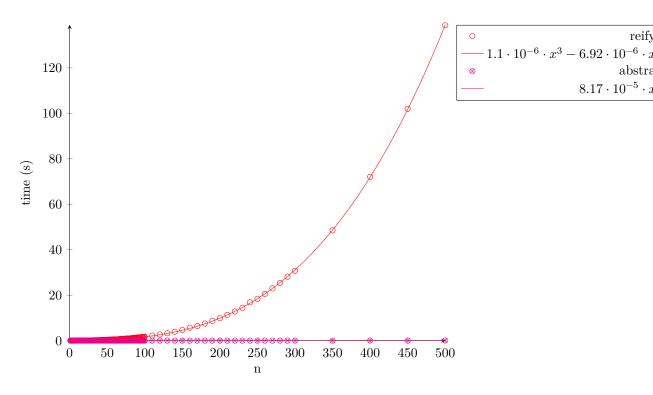


Figure 13: timing-typeclass-reification-let-in-HOAS



 ${\bf Figure~14:~timing-type class-reification-let-in-PHOAS}$