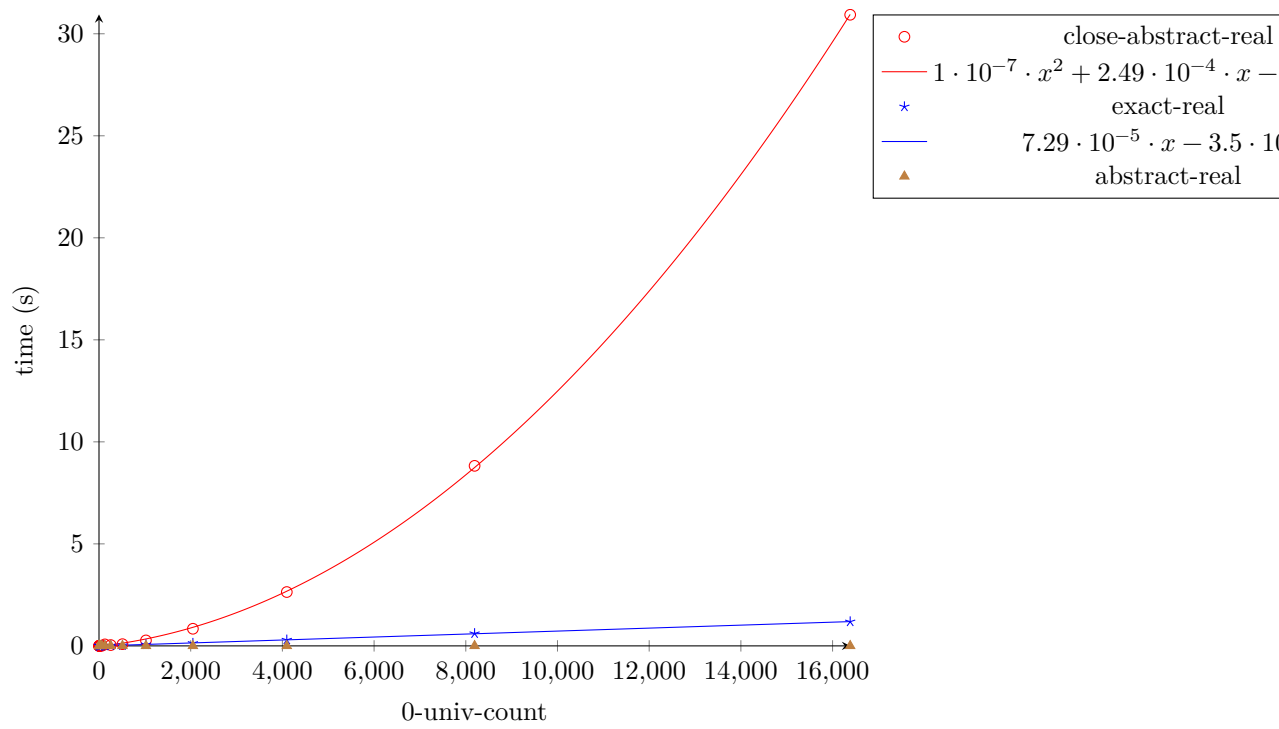Figure 1: timing-pattern

1

Figure 2: timing-n-polymorphic-universes param-1-n 0
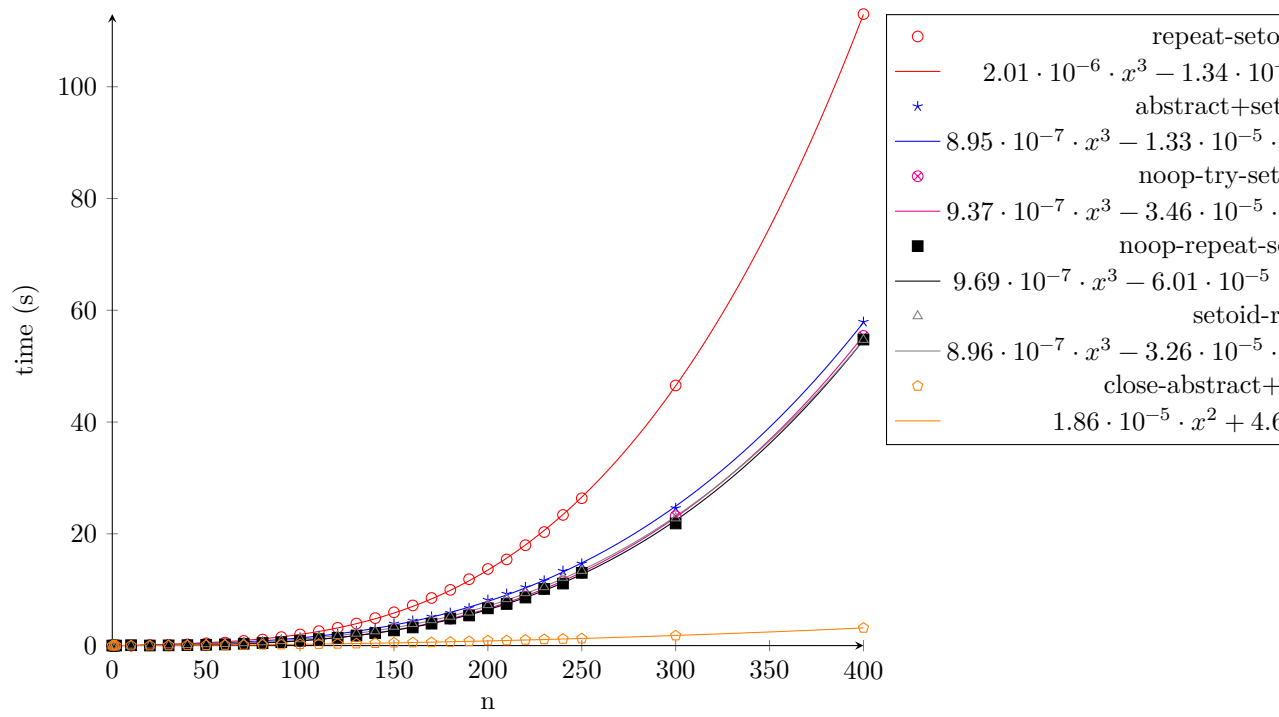
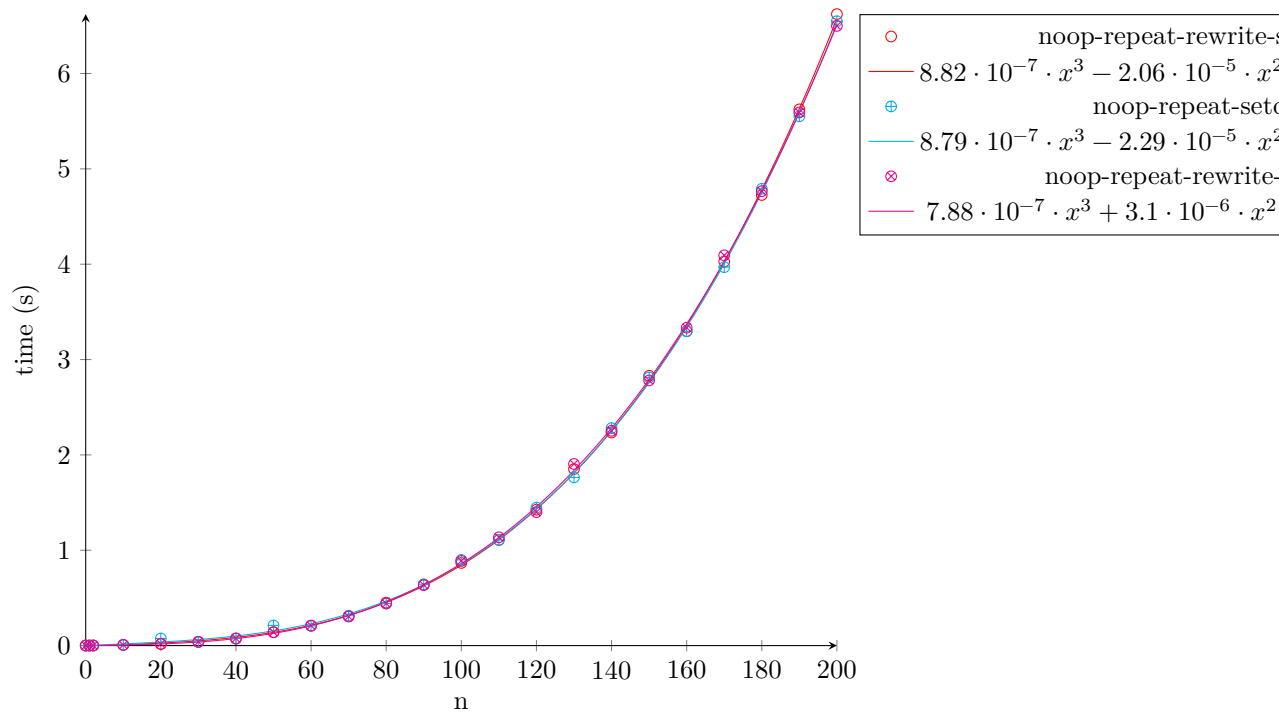Figure 3: timing-repeat-setoid-rewrite-under-binders

3

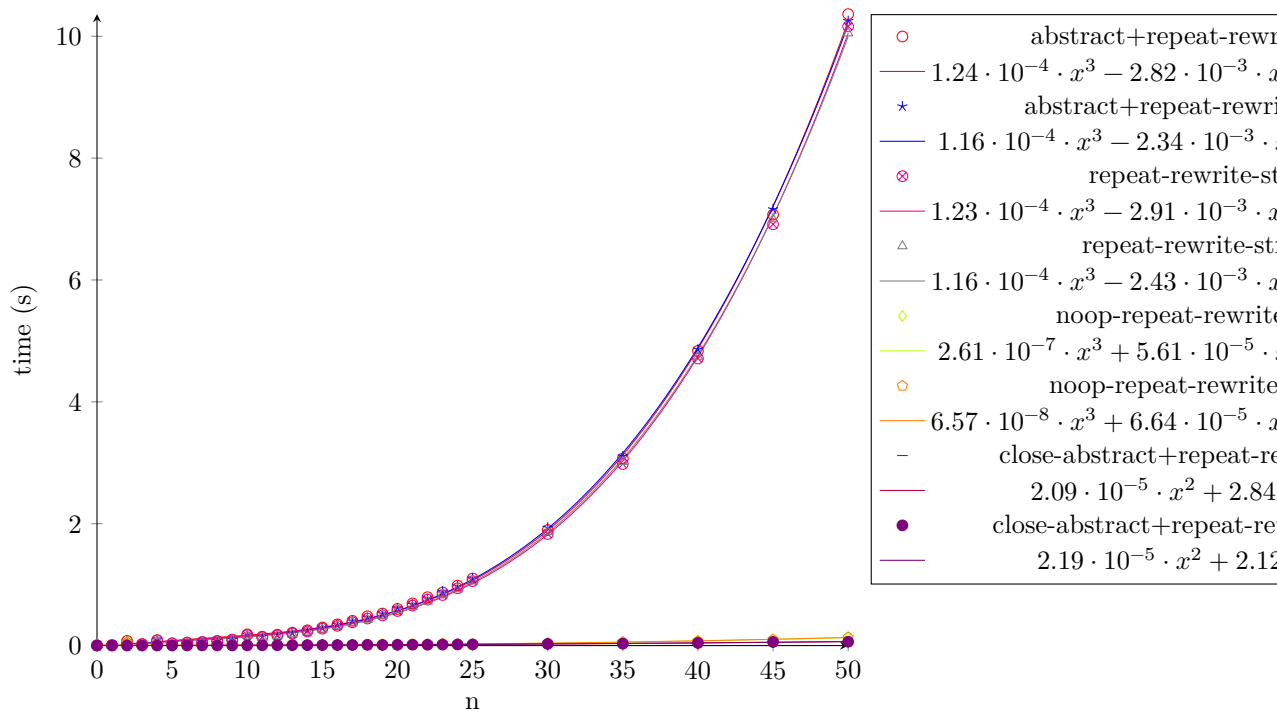Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

4

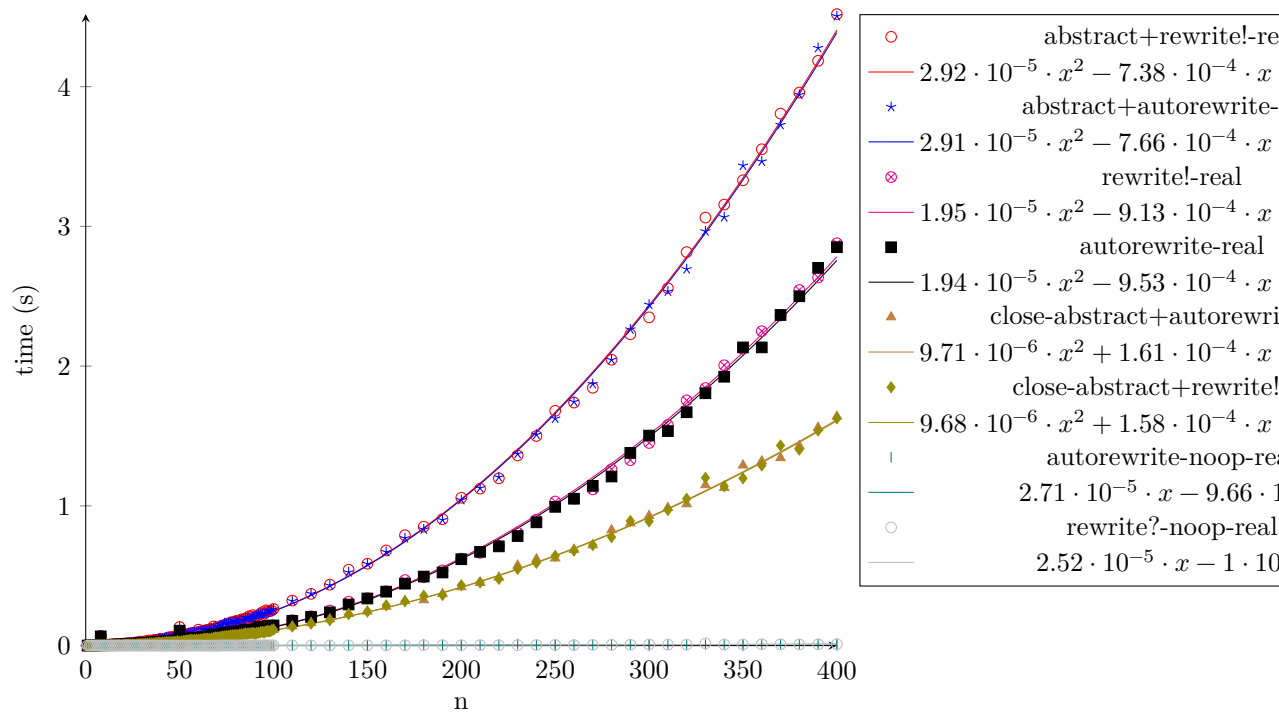Figure 5: timing-rewrite-strat-under-binders
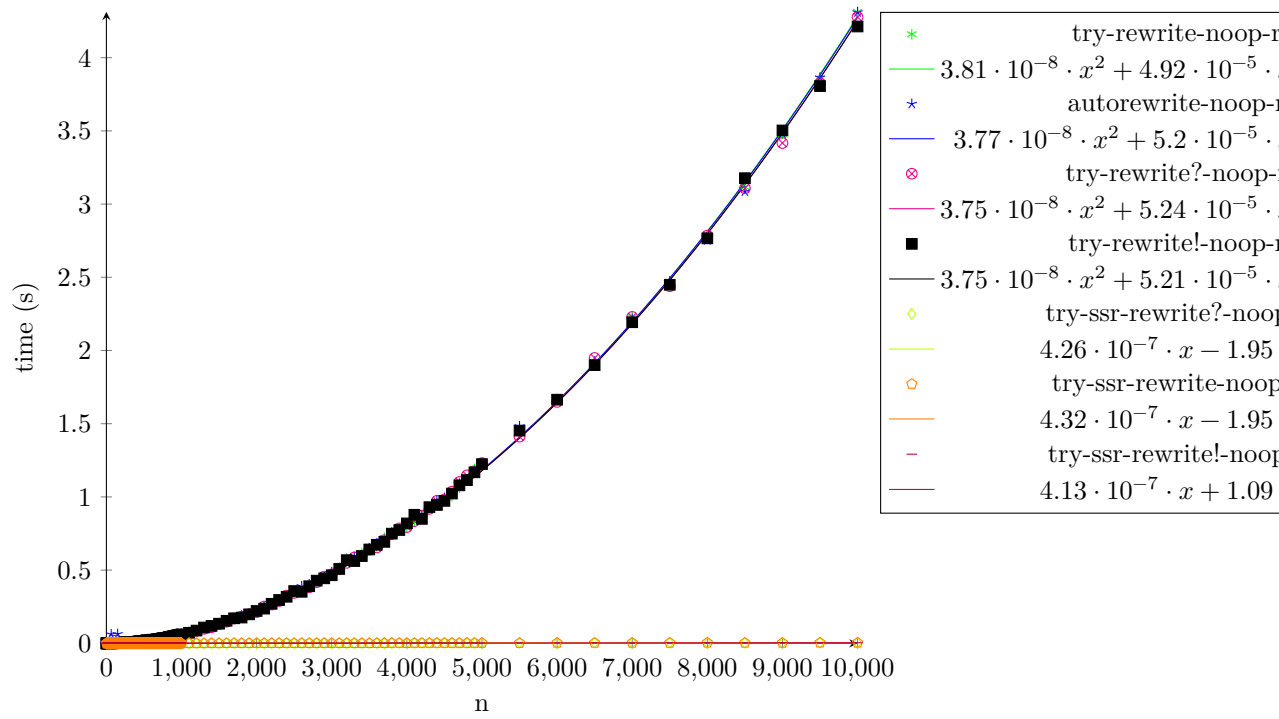
Figure 6: timing-rewrite-repeated-app-autorewrite

The legend and equations shown in the figure:

abstract+rewrite!-re...
$2.92 \cdot 10^{-5} \cdot x^2 - 7.38 \cdot 10^{-4} \cdot x$

abstract+autorewrite-...
$2.91 \cdot 10^{-5} \cdot x^2 - 7.66 \cdot 10^{-4} \cdot x$

rewrite!-real
$1.95 \cdot 10^{-5} \cdot x^2 - 9.13 \cdot 10^{-4} \cdot x$

autorewrite-real
$1.94 \cdot 10^{-5} \cdot x^2 - 9.53 \cdot 10^{-4} \cdot x$

close-abstract+autorewri...
$9.71 \cdot 10^{-6} \cdot x^2 + 1.61 \cdot 10^{-4} \cdot x$

close-abstract+rewrite!...
$9.68 \cdot 10^{-6} \cdot x^2 + 1.58 \cdot 10^{-4} \cdot x$

autorewrite-noop-re...
$2.71 \cdot 10^{-5} \cdot x - 9.66 \cdot 1...$

rewrite?-noop-real
$2.52 \cdot 10^{-5} \cdot x - 1 \cdot 10...$

Figure 7: timing-rewrite-repeated-app-autorewrite-noop

The figure legend contains the following entries:

- try-rewrite-noop-r
- $3.81 \cdot 10^{-8} \cdot x^2 + 4.92 \cdot 10^{-5} \cdot$
- autorewrite-noop-r
- $3.77 \cdot 10^{-8} \cdot x^2 + 5.2 \cdot 10^{-5} \cdot$
- try-rewrite?-noop-
- $3.75 \cdot 10^{-8} \cdot x^2 + 5.24 \cdot 10^{-5} \cdot$
- try-rewrite!-noop-r
- $3.75 \cdot 10^{-8} \cdot x^2 + 5.21 \cdot 10^{-5} \cdot$
- try-ssr-rewrite?-noop
- $4.26 \cdot 10^{-7} \cdot x - 1.95$
- try-ssr-rewrite-noop
- $4.32 \cdot 10^{-7} \cdot x - 1.95$
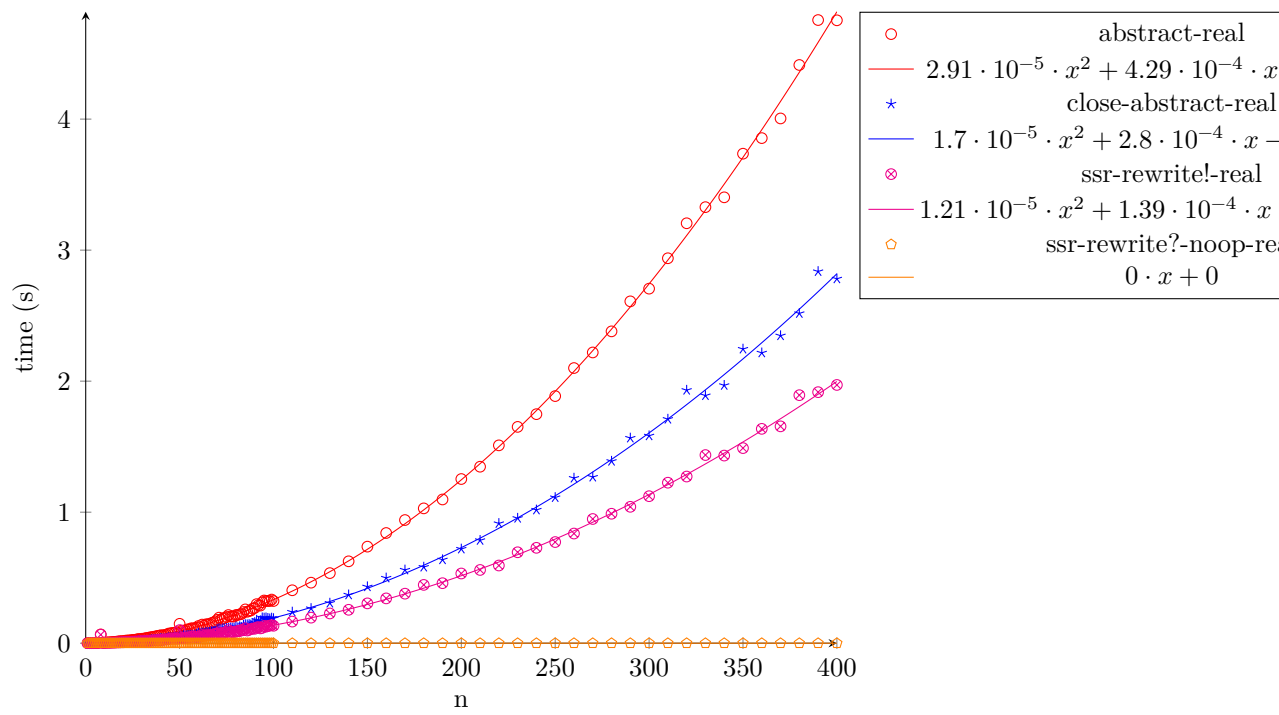- try-ssr-rewrite!-noop
- $4.13 \cdot 10^{-7} \cdot x + 1.09$

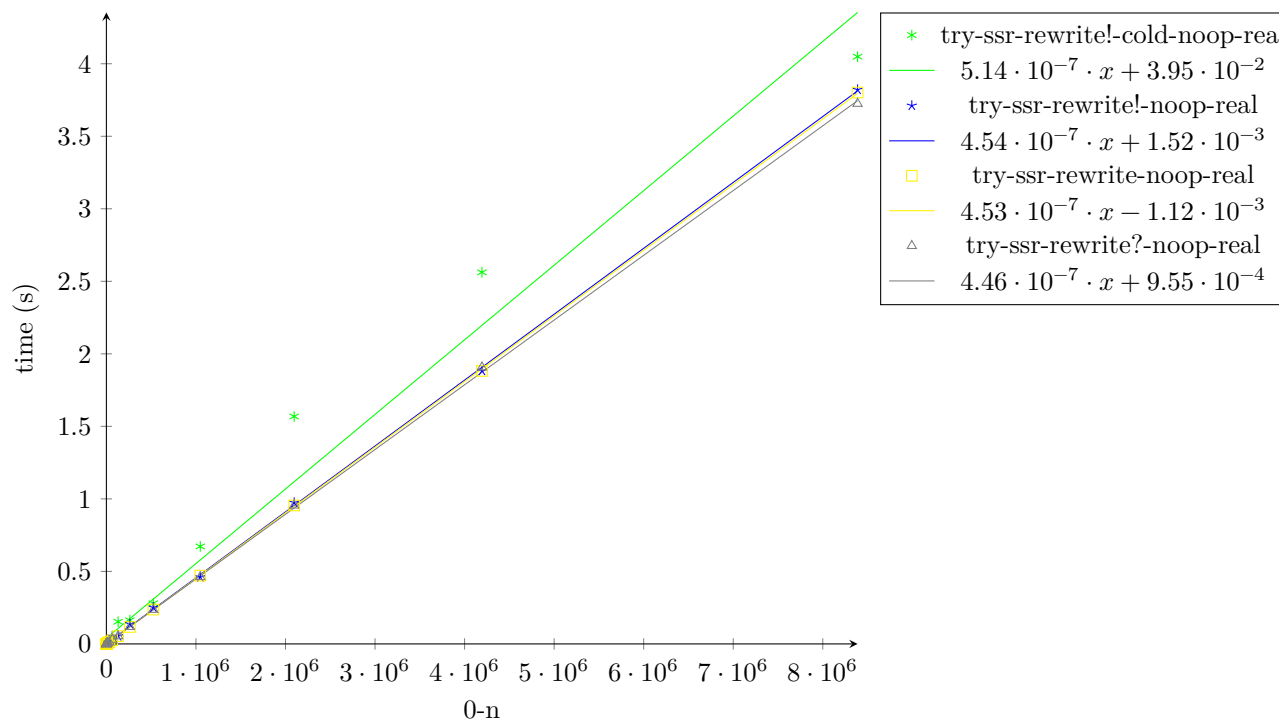Figure 8: timing-rewrite-repeated-app-ssrrewrite

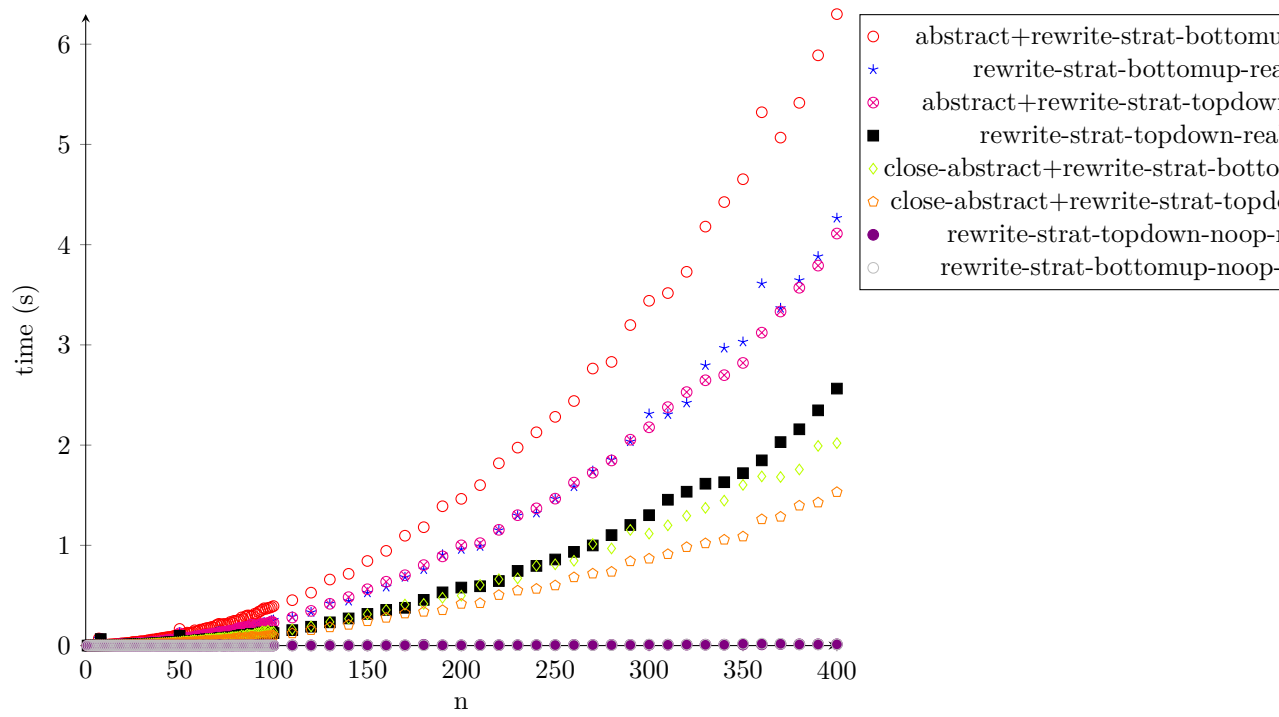Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1

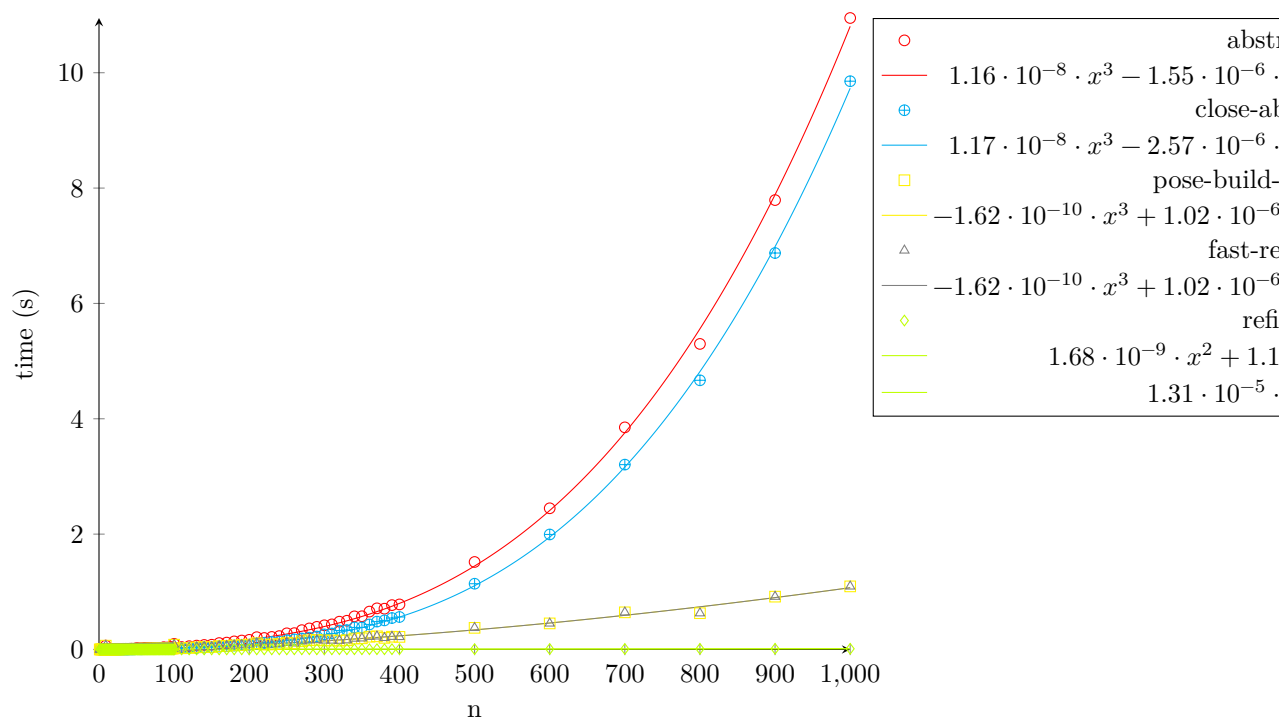Figure 10: timing-rewrite-repeated-app-rewrite-strat

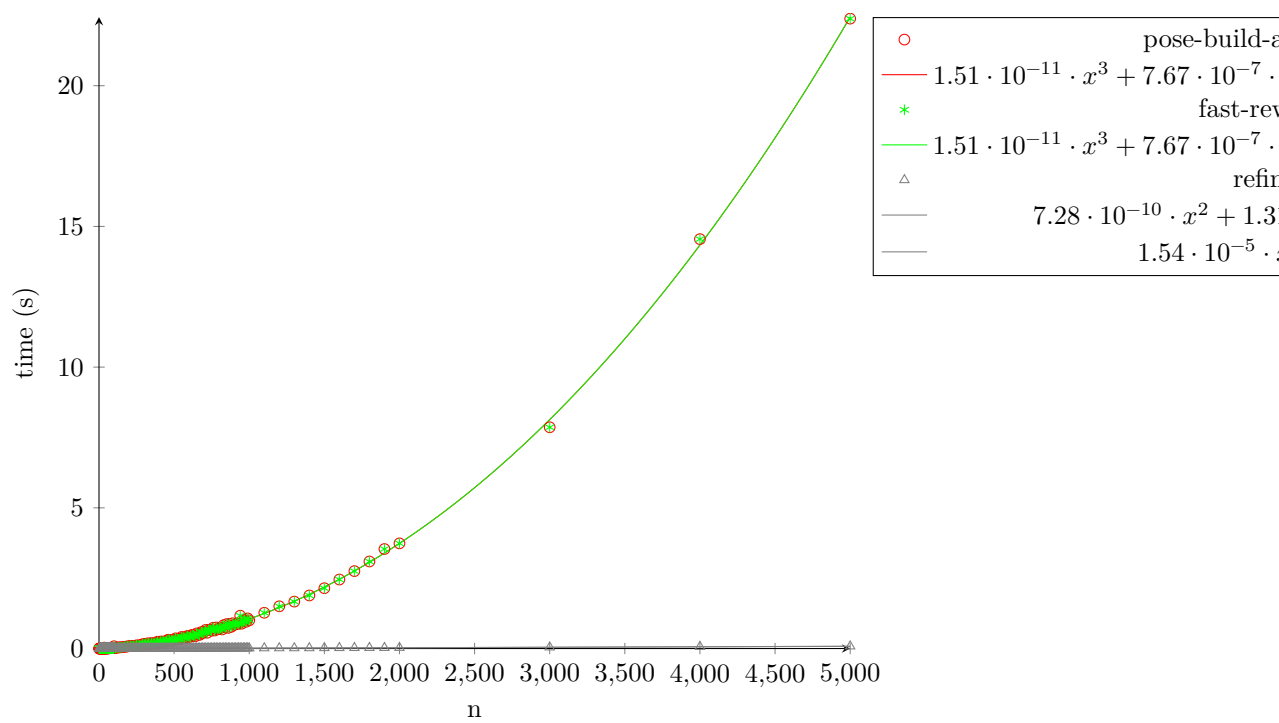Figure 11: timing-rewrite-repeated-app-fast-rewrite

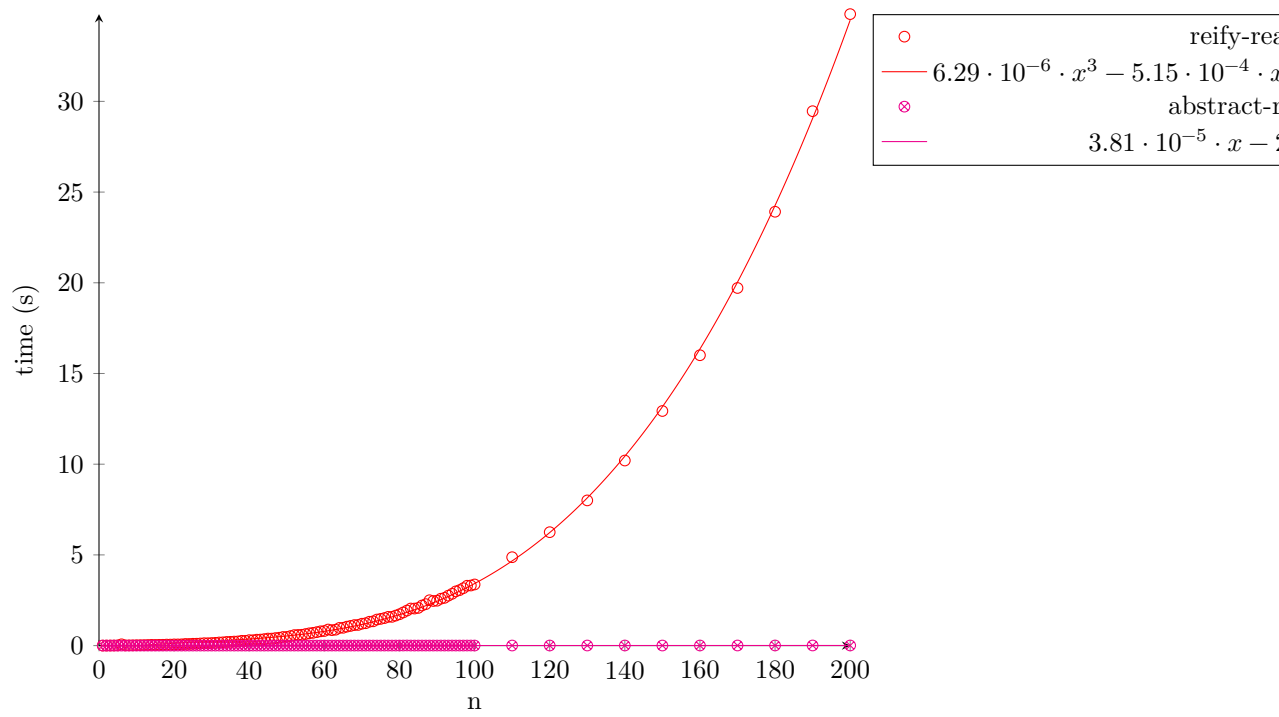Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

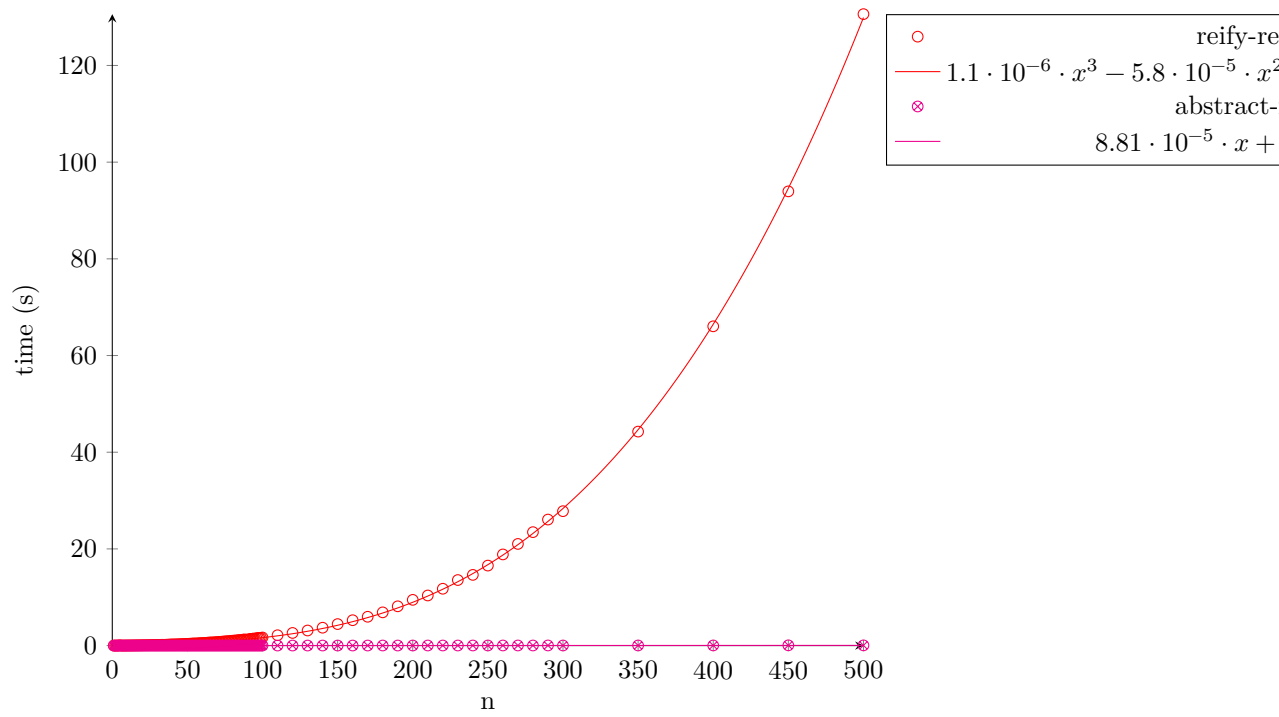Figure 13: timing-typeclass-reification-let-in-HOAS

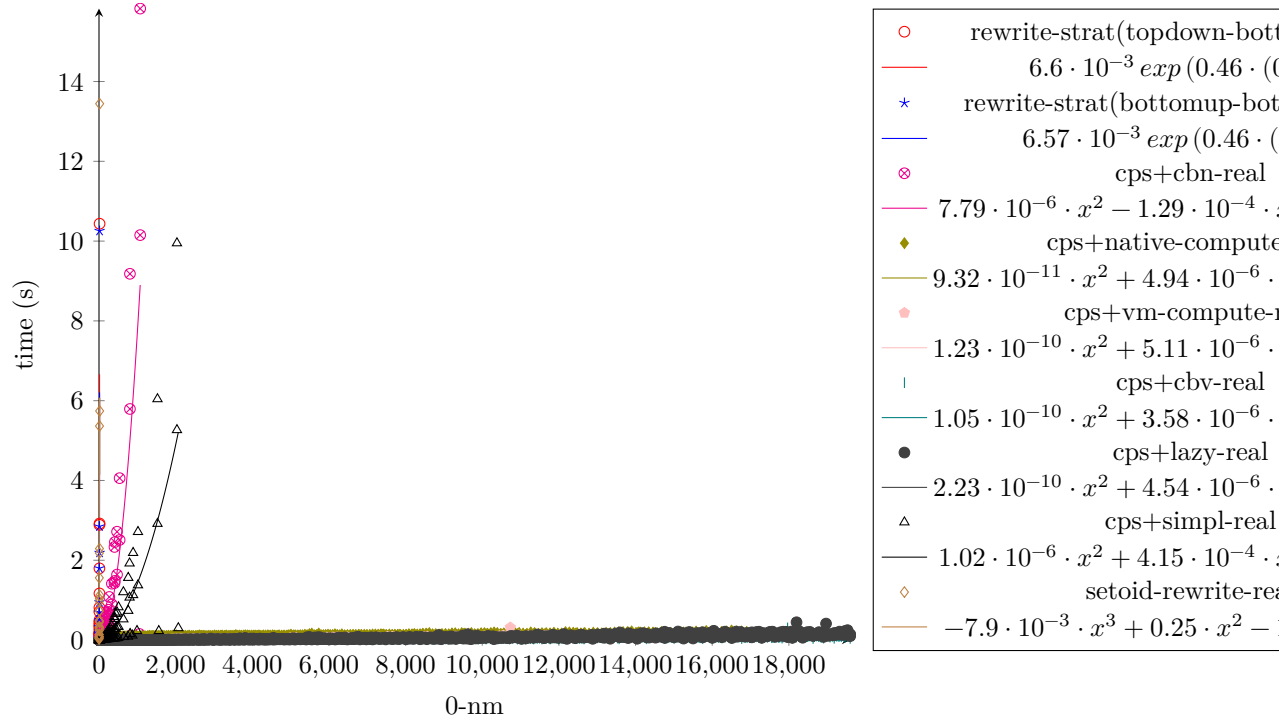13

Figure 14: timing-typeclass-reification-let-in-PHOAS

Figure 15: timing-rewrite-lift-lets-map param-1-n 1, param-2-m 1

15

The plot shows time (s) versus 0-nm with the following legend entries:

- setoid-r... (green asterisk): $1.58 \cdot 10^{-9} \cdot x^3 + 3.62 \cdot 10^{-6} \cdot$
- ssr-rew... (blue star): $3.37 \cdot 10^{-9} \cdot x^3 - 2.58 \cdot 10^{-8} \cdot$
- rewr... (magenta circled-cross): $4.7 \cdot 10^{-9} \cdot x^3 - 4.73 \cdot 10^{-6} \cdot$
- rewrite-strat... (gray triangle): $-4.97 \cdot 10^{-8} \cdot x^3 + 2.43 \cdot 10^{-5}$
- rewrite-strat... (brown filled triangle): $-3.66 \cdot 10^{-9} \cdot x^3 + 6.77 \cdot 10^{-6}$
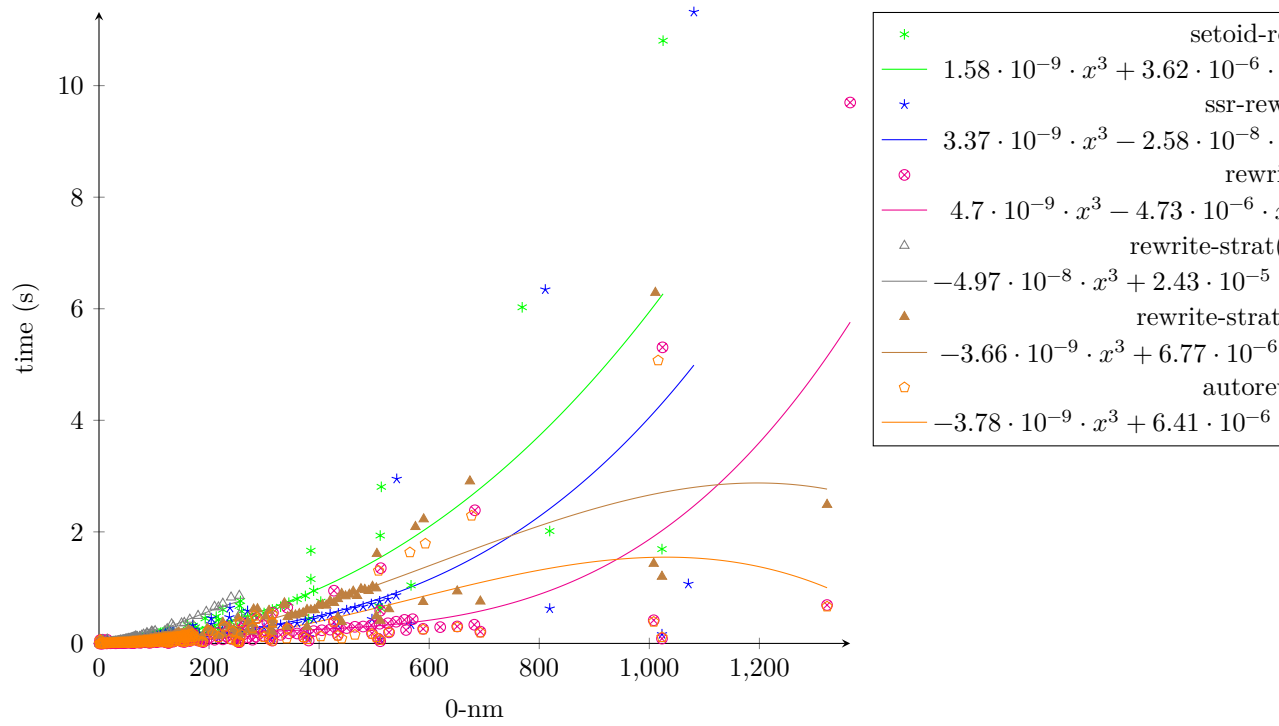- autore... (orange pentagon): $-3.78 \cdot 10^{-9} \cdot x^3 + 6.41 \cdot 10^{-6}$

Figure 16: timing-rewrite-plus-0-tree param-1-n 0, param-2-m 1, param-3-input-size 5, param-4-output-size 3, param-5-num-rewrites 1
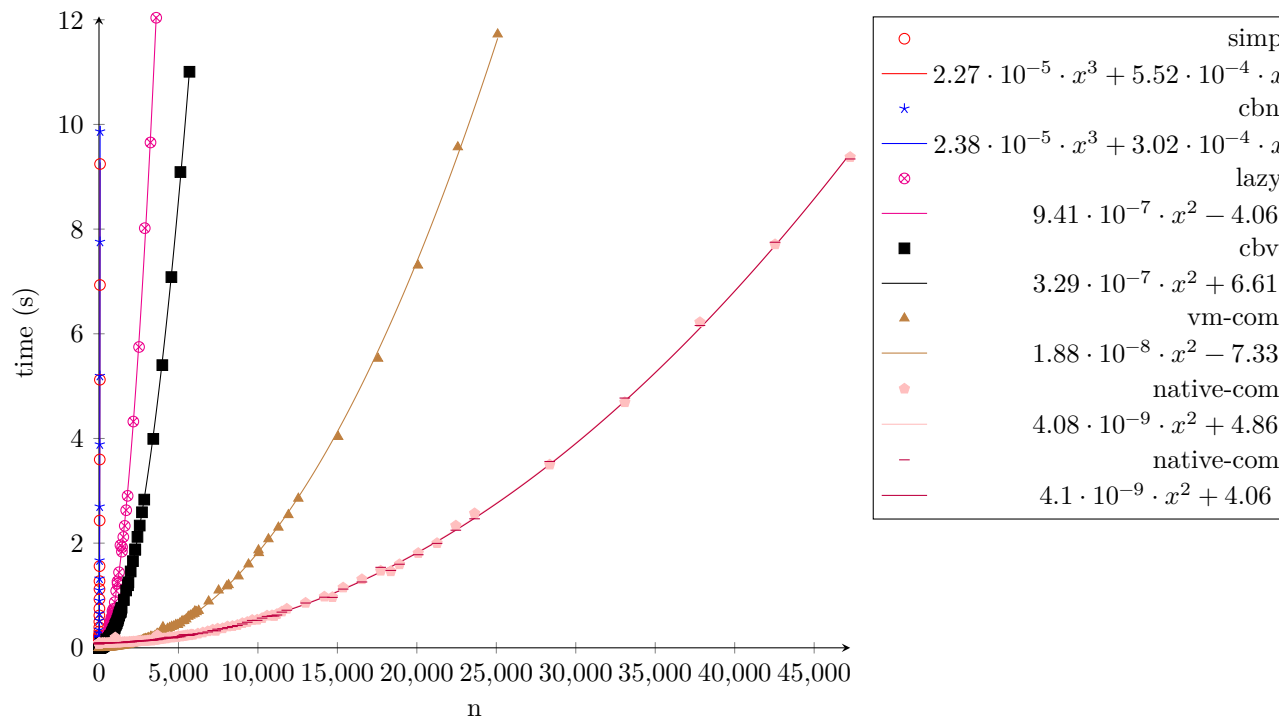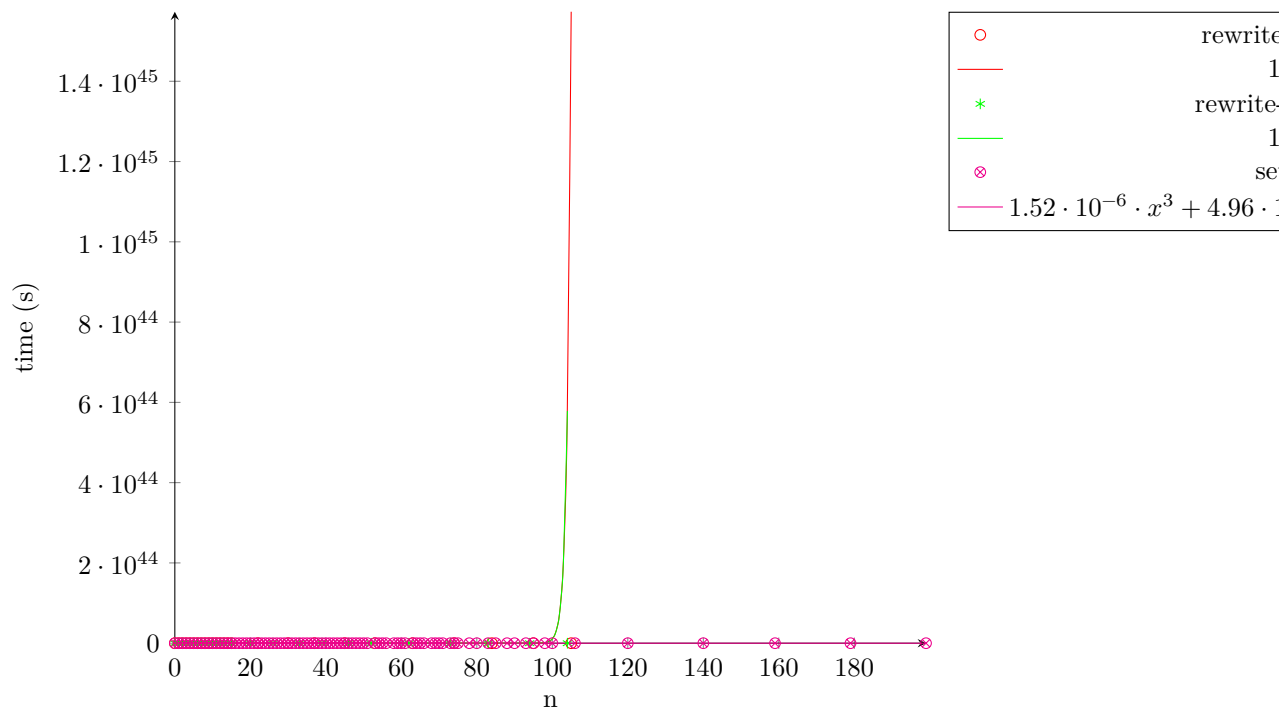
Figure 17: timing-sieve-of-eratosthenes

Figure 18: timing-rewrite-under-lets-plus-0