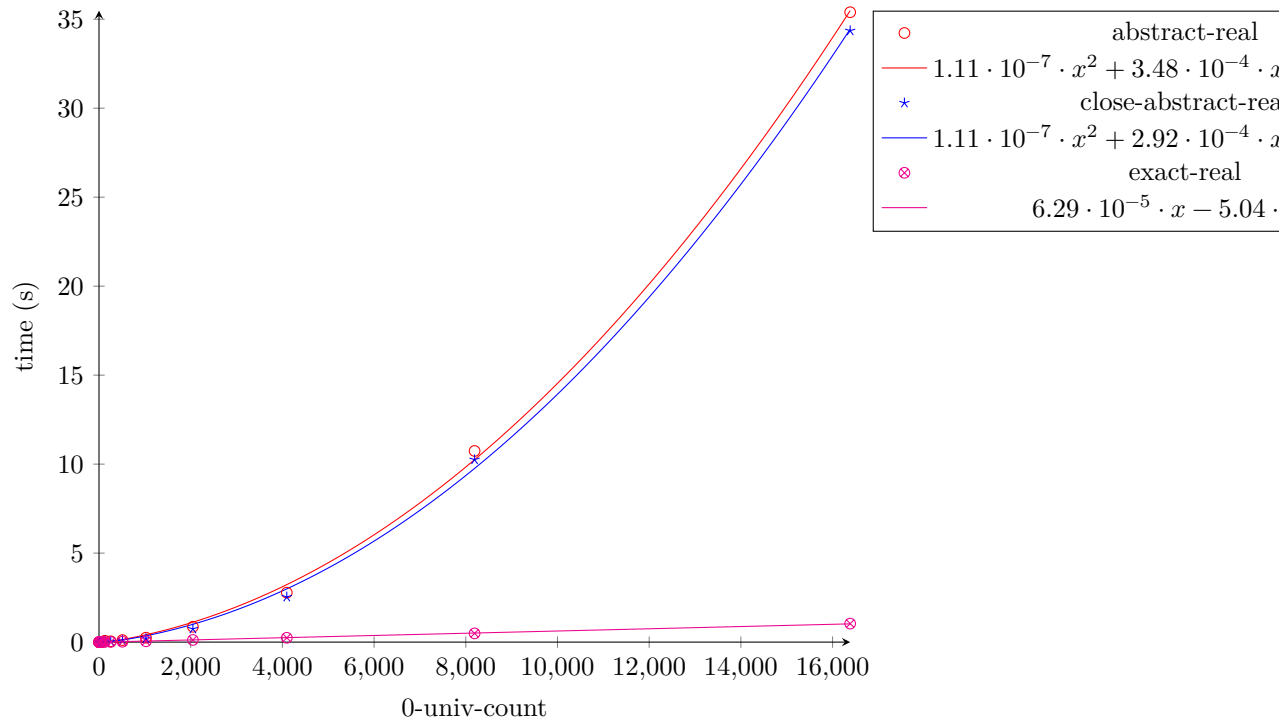Figure 1: timing-pattern

1

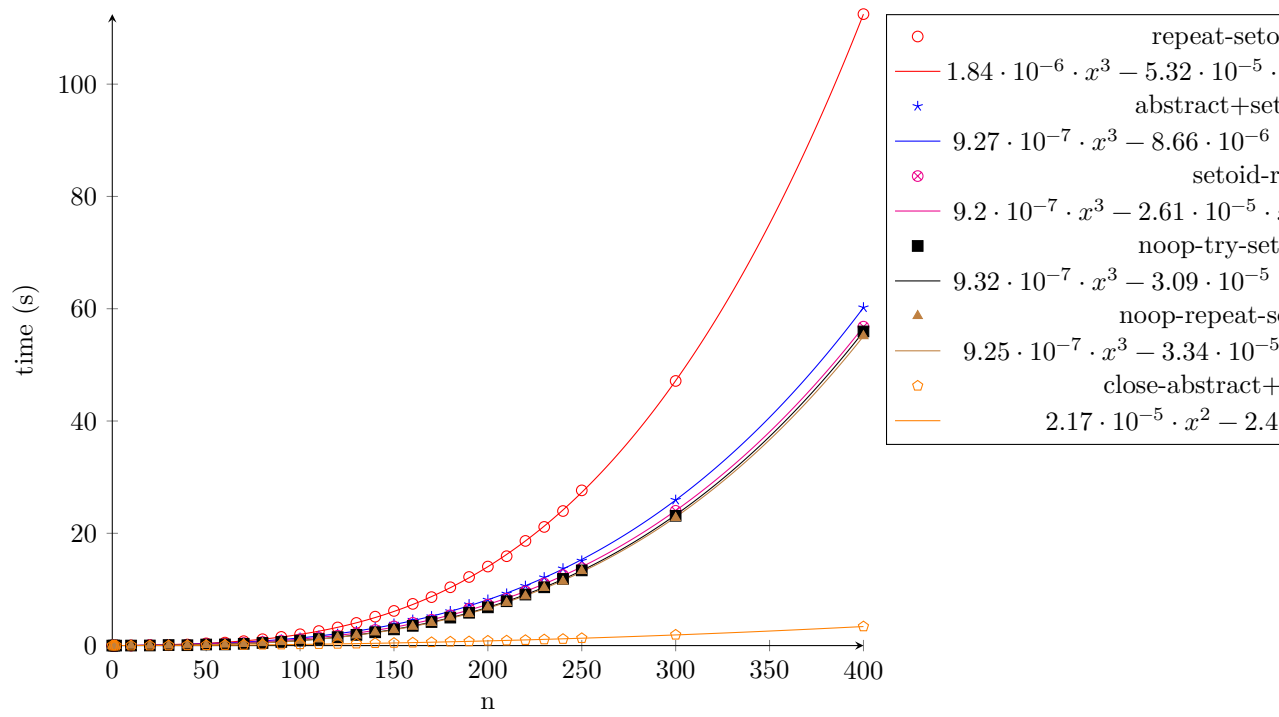Figure 2: timing-n-polymorphic-universes param-1-n 0

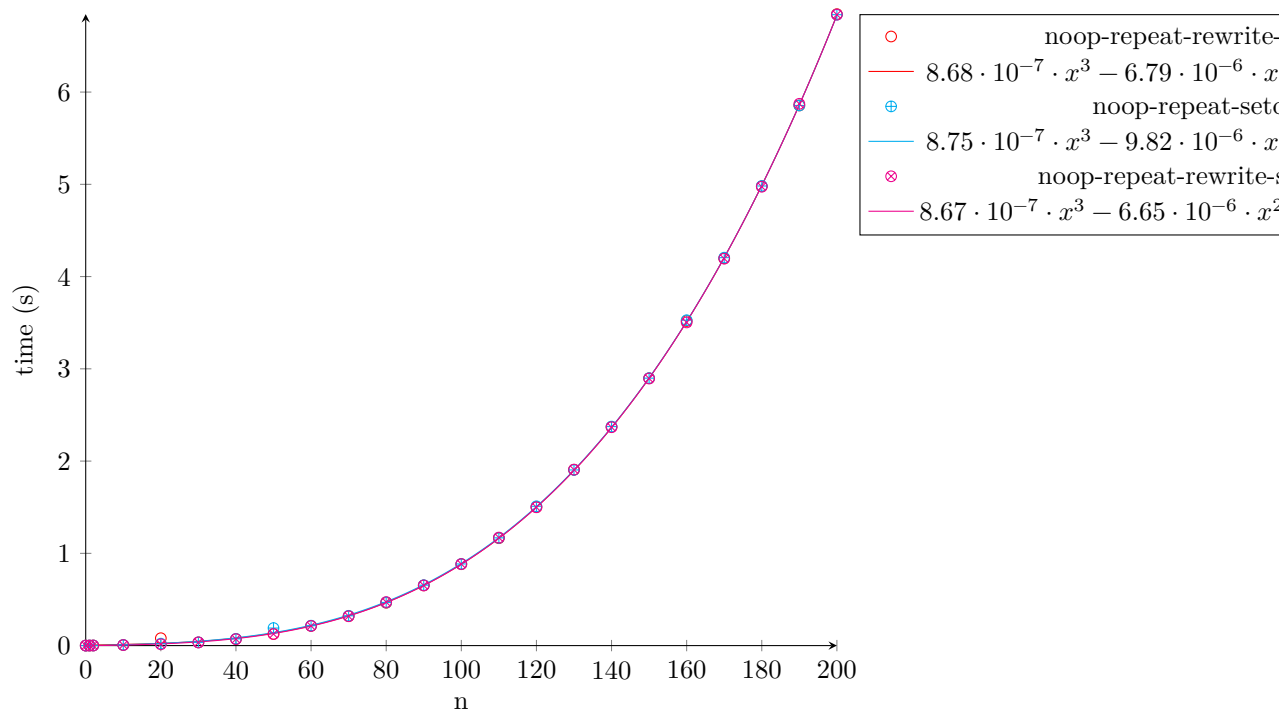Figure 3: timing-repeat-setoid-rewrite-under-binders

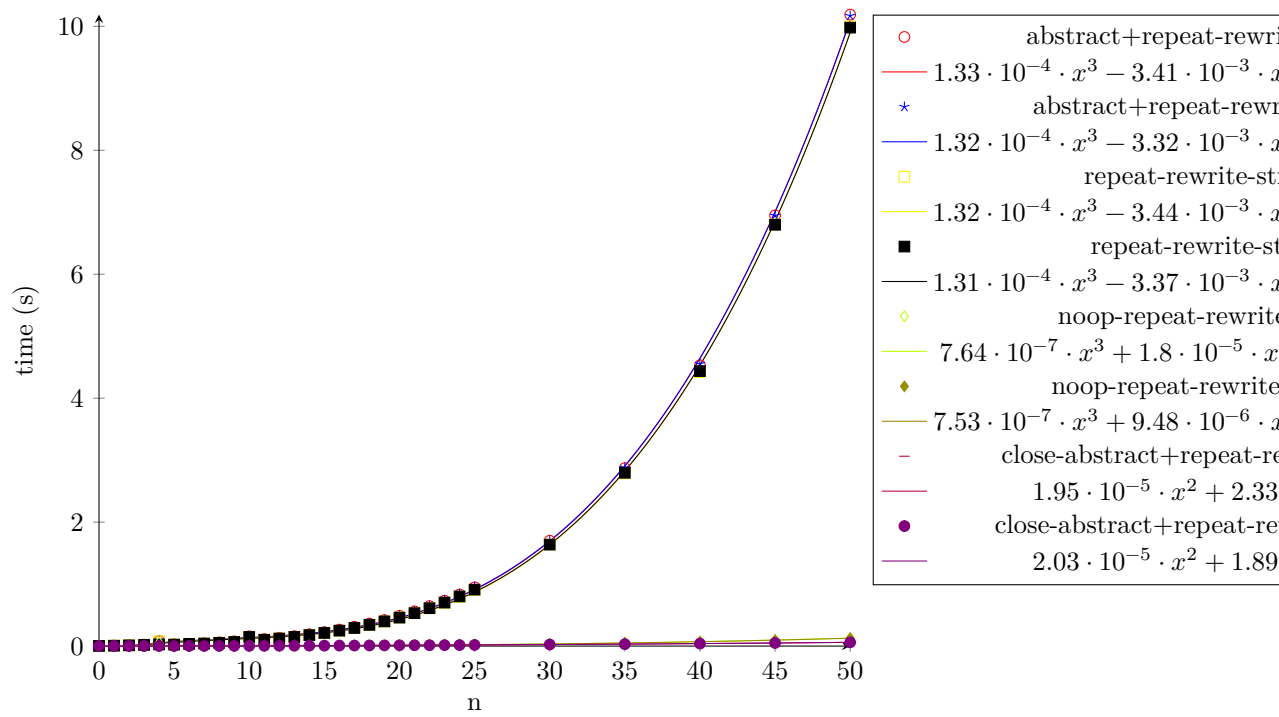Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

4

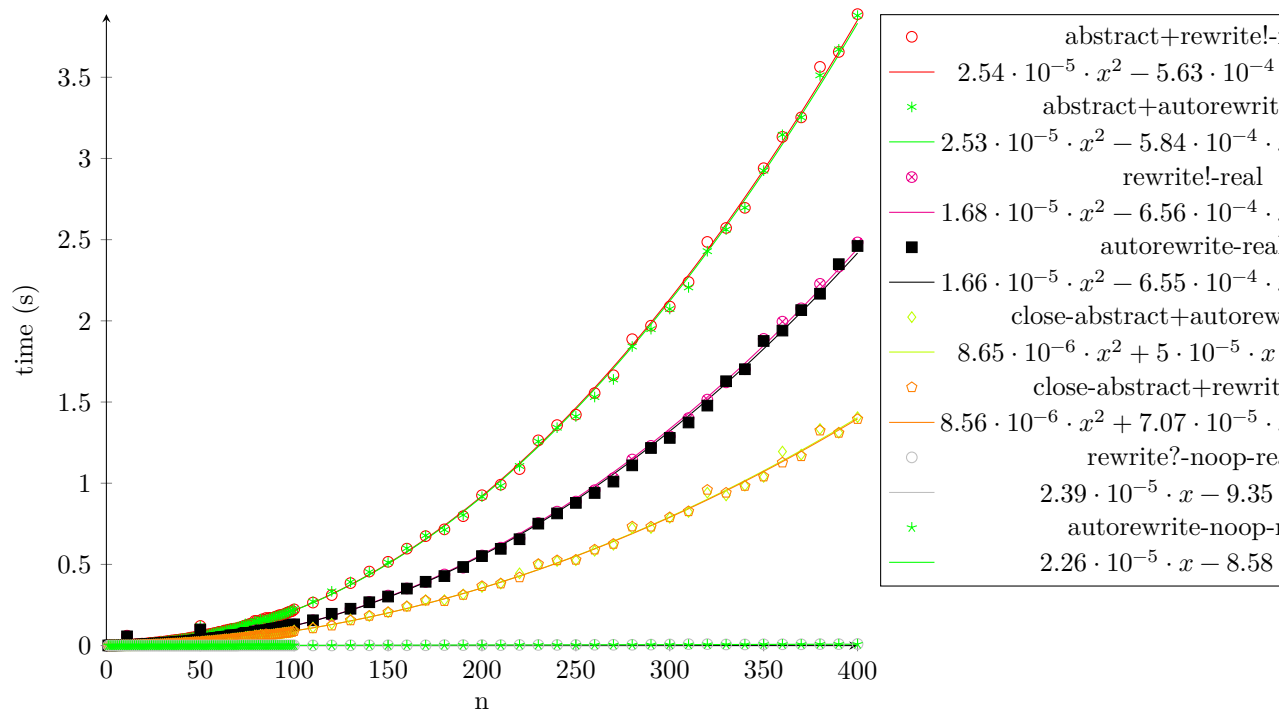Figure 5: timing-rewrite-strat-under-binders
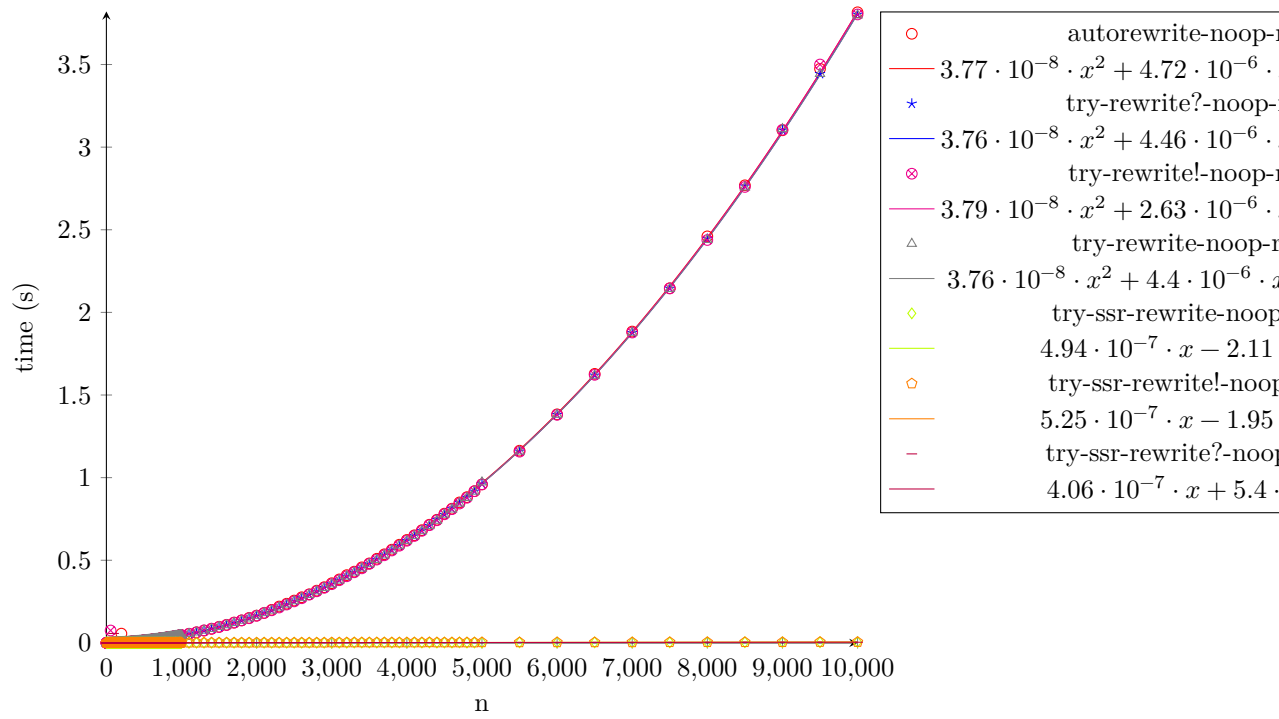
Figure 6: timing-rewrite-repeated-app-autorewrite

6

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

The figure contains the following legend entries and fitted equations:

- autorewrite-noop-...
  $3.77 \cdot 10^{-8} \cdot x^2 + 4.72 \cdot 10^{-6} \cdot$ ...
- try-rewrite?-noop-...
  $3.76 \cdot 10^{-8} \cdot x^2 + 4.46 \cdot 10^{-6} \cdot$ ...
- try-rewrite!-noop-...
  $3.79 \cdot 10^{-8} \cdot x^2 + 2.63 \cdot 10^{-6} \cdot$ ...
- try-rewrite-noop-...
  $3.76 \cdot 10^{-8} \cdot x^2 + 4.4 \cdot 10^{-6} \cdot x$ ...
- try-ssr-rewrite-noop...
  $4.94 \cdot 10^{-7} \cdot x - 2.11$ ...
- try-ssr-rewrite!-noop...
  $5.25 \cdot 10^{-7} \cdot x - 1.95$ ...
- try-ssr-rewrite?-noop...
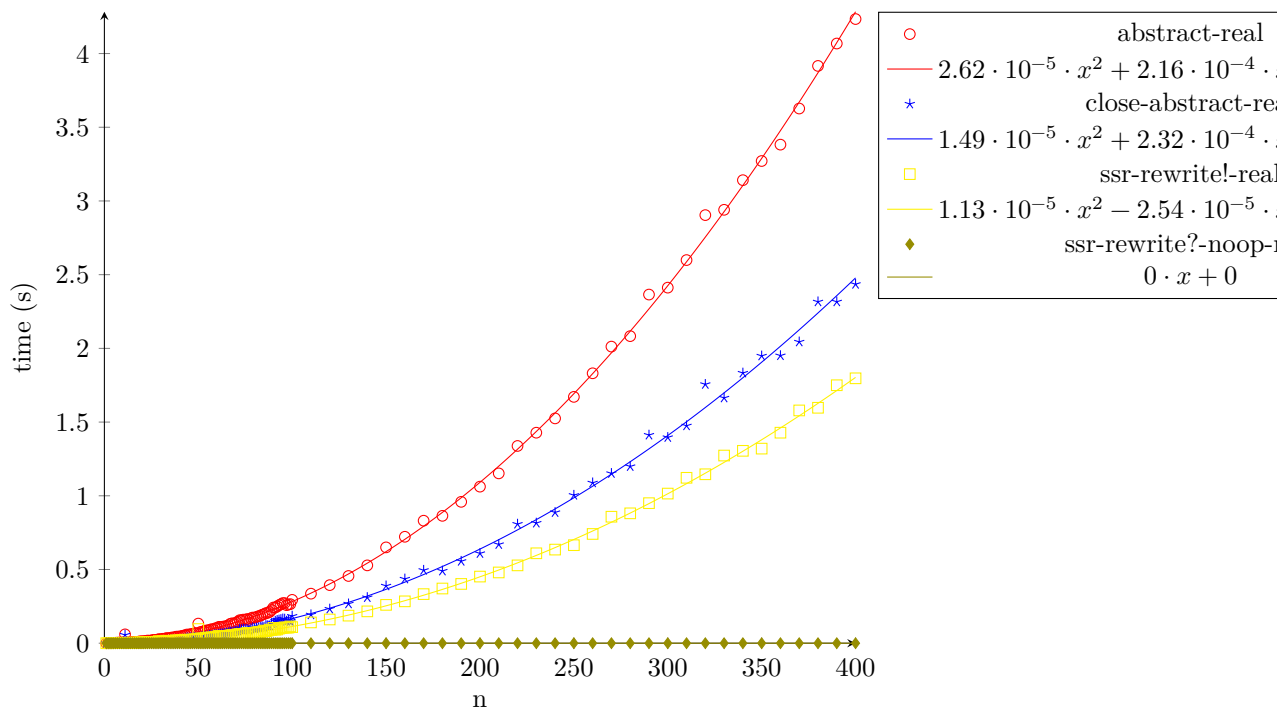 $4.06 \cdot 10^{-7} \cdot x + 5.4 \cdot$ ...

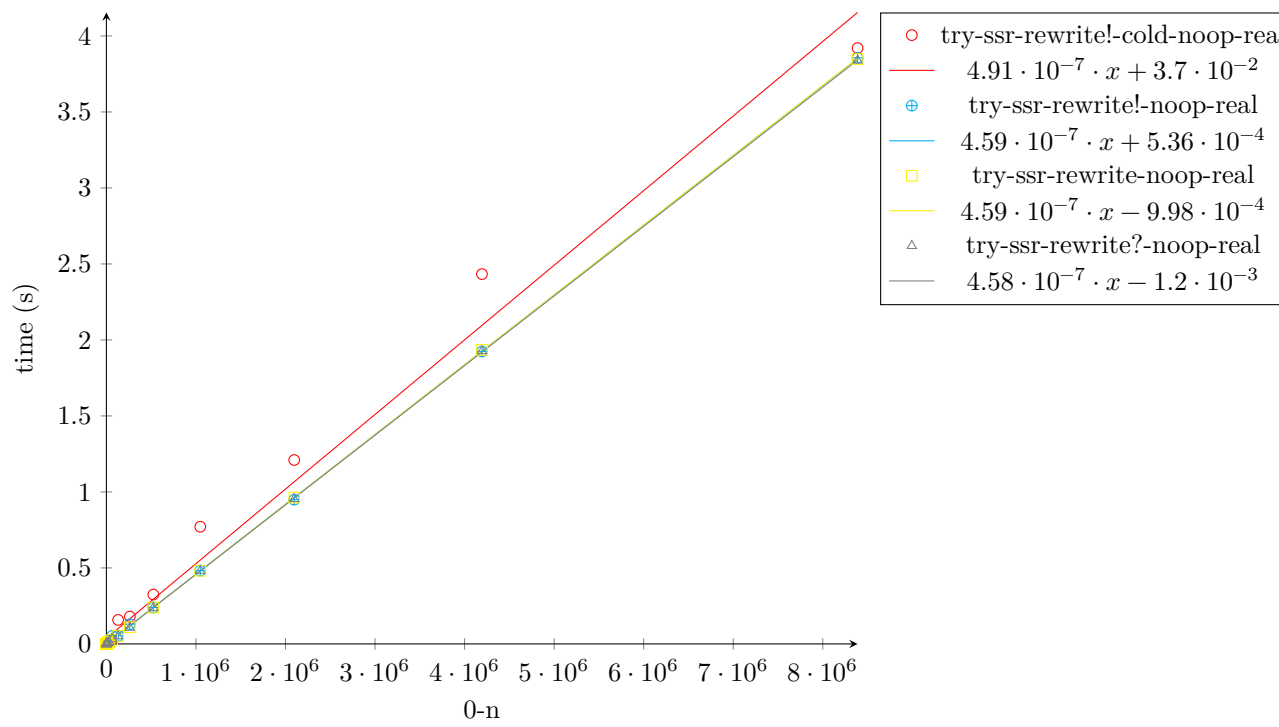Figure 8: timing-rewrite-repeated-app-ssrrewrite

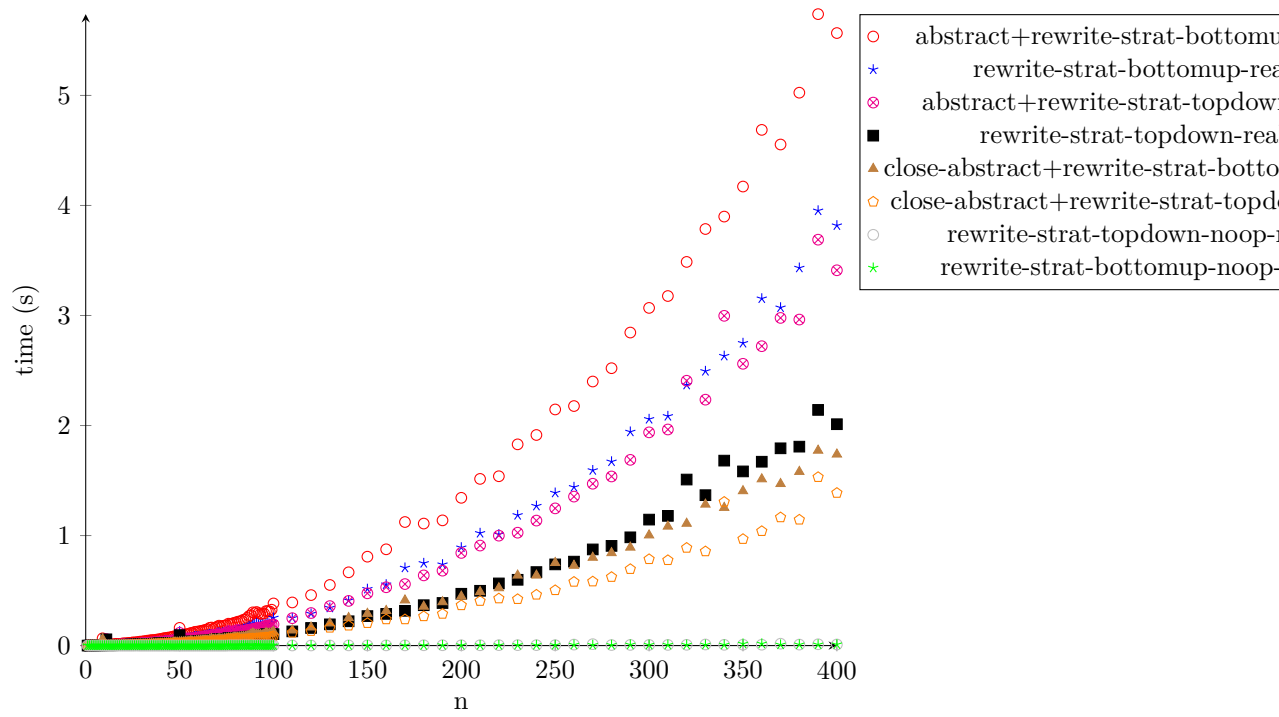Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn   1

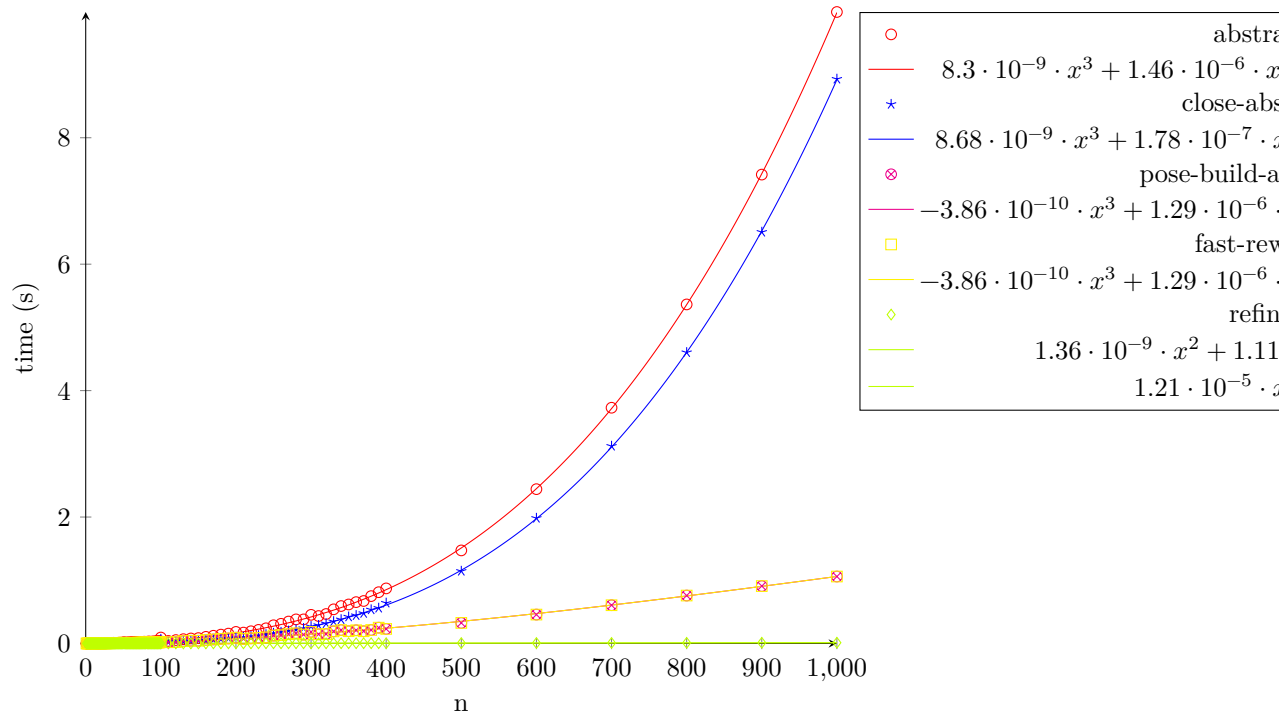Figure 10: timing-rewrite-repeated-app-rewrite-strat

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

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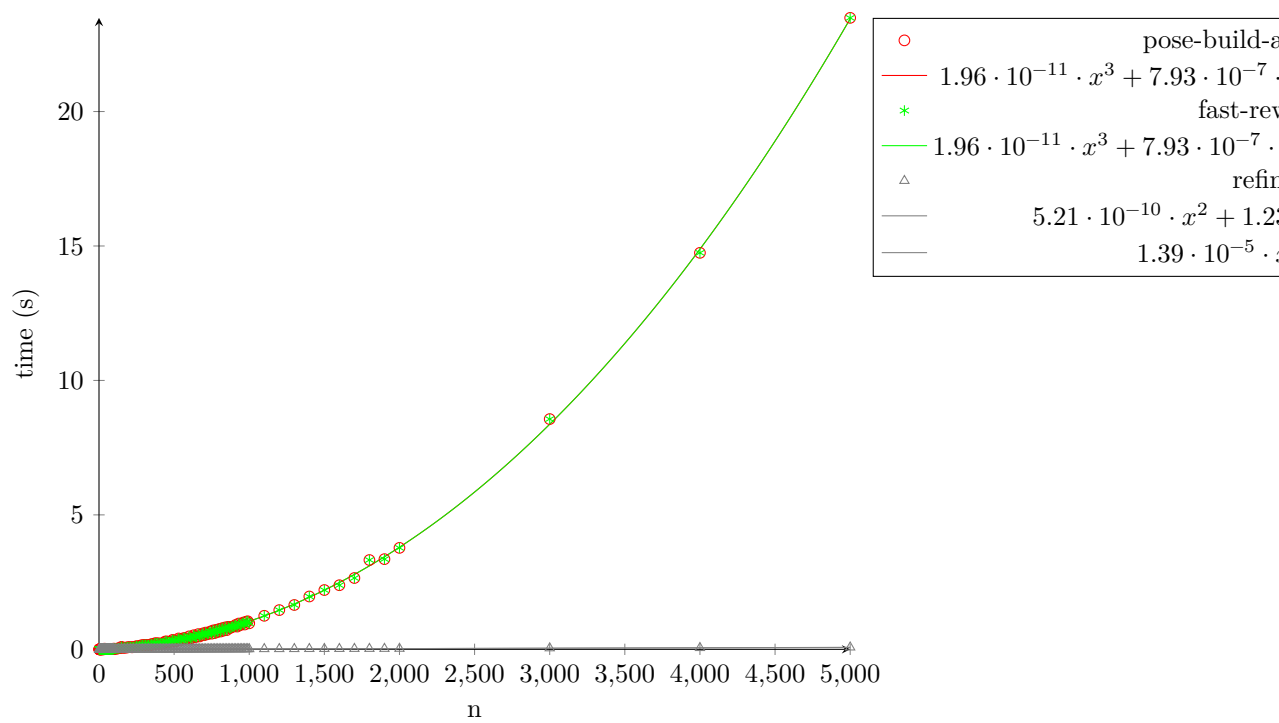
Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

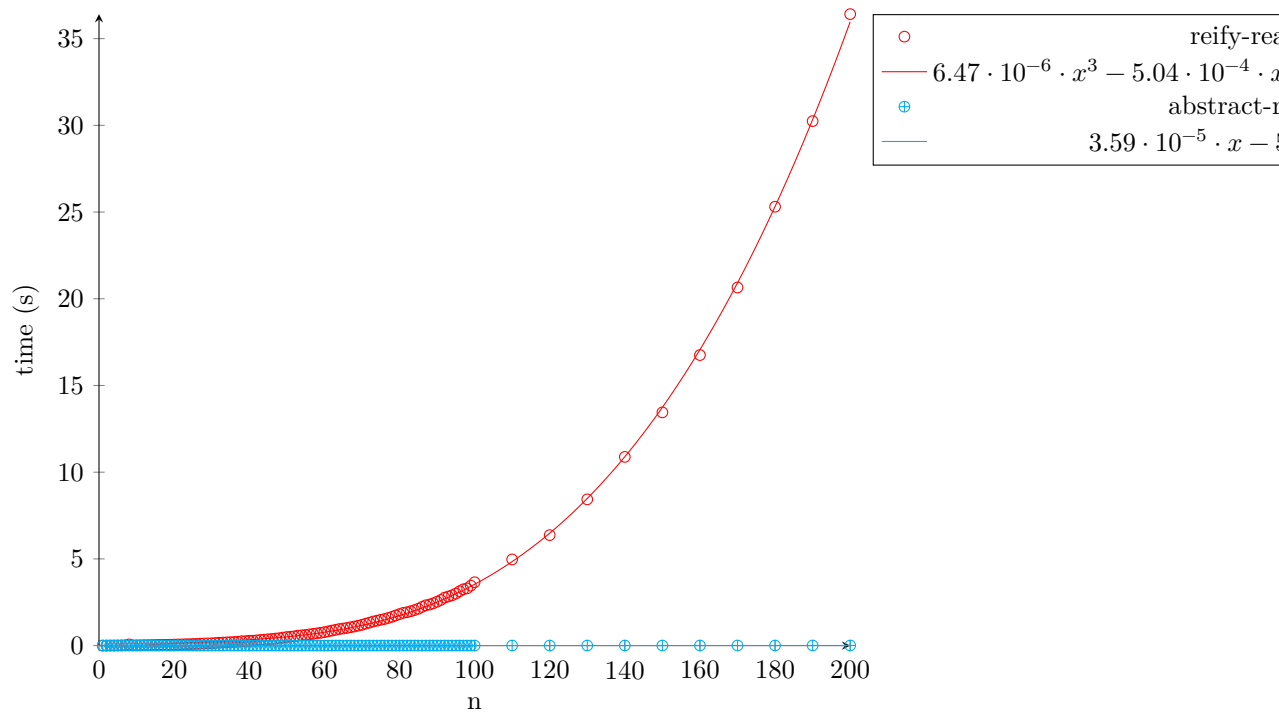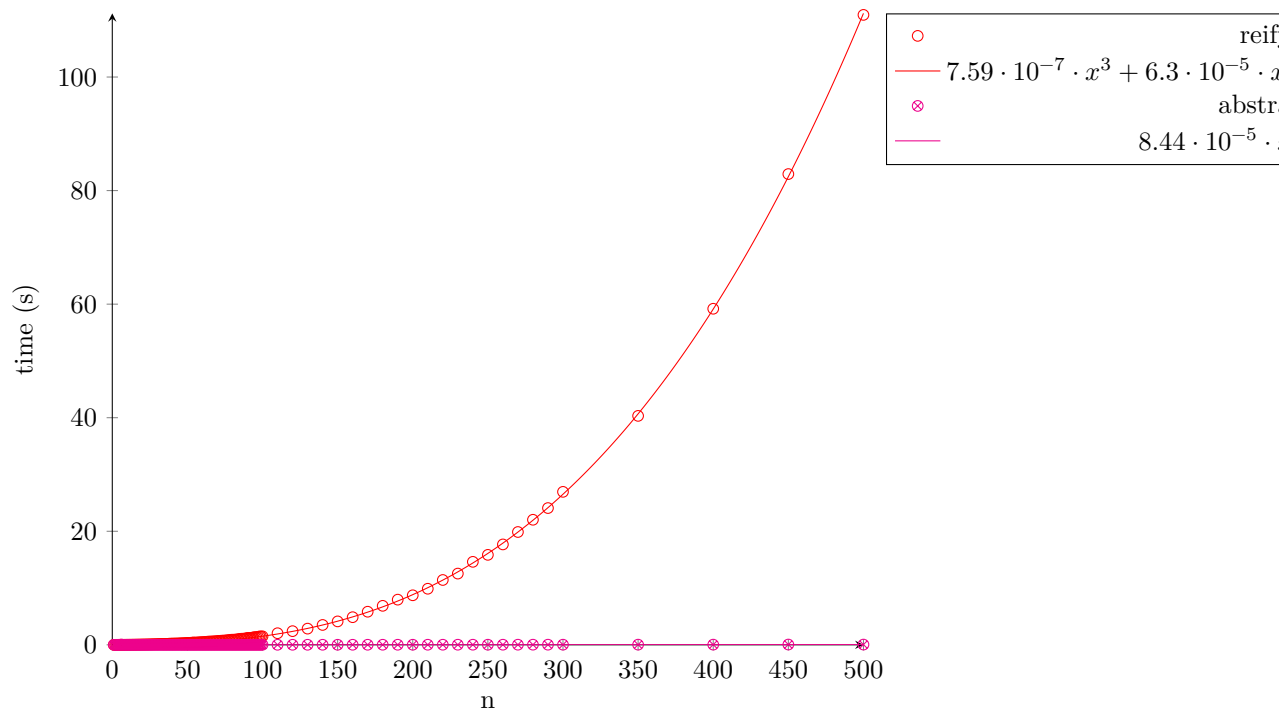Figure 13: timing-typeclass-reification-let-in-HOAS

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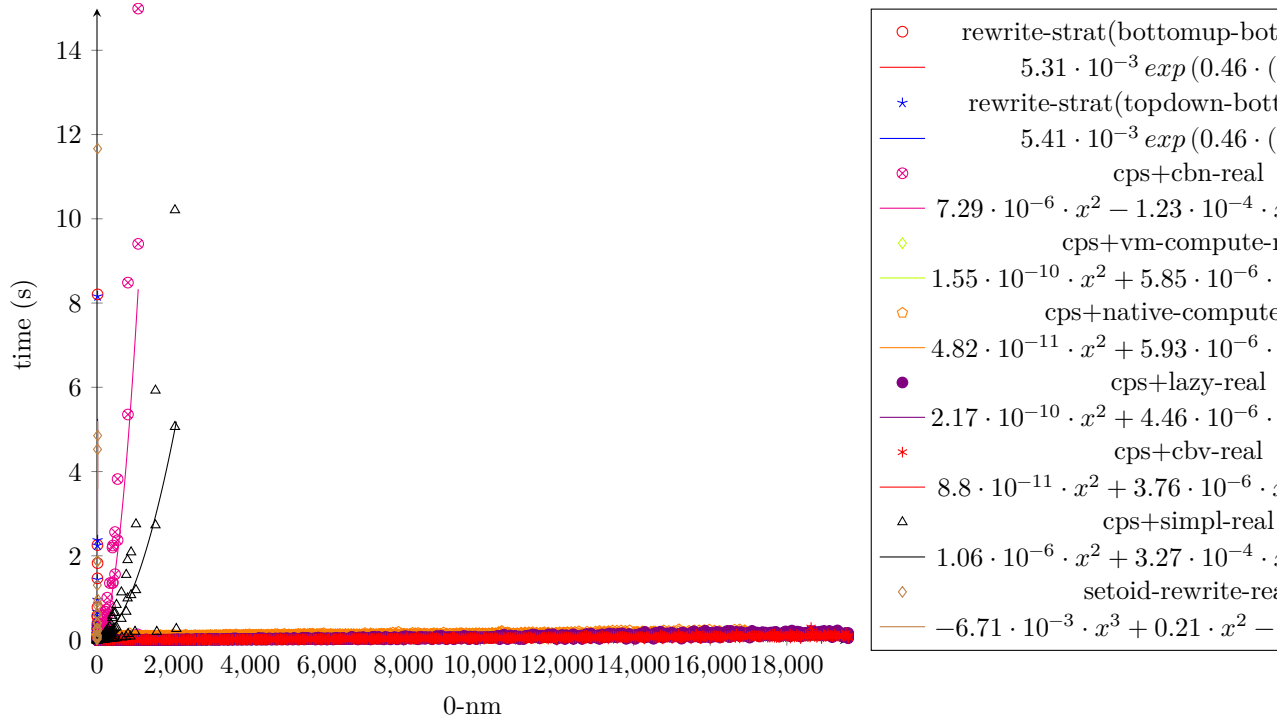Figure 14: timing-typeclass-reification-let-in-PHOAS

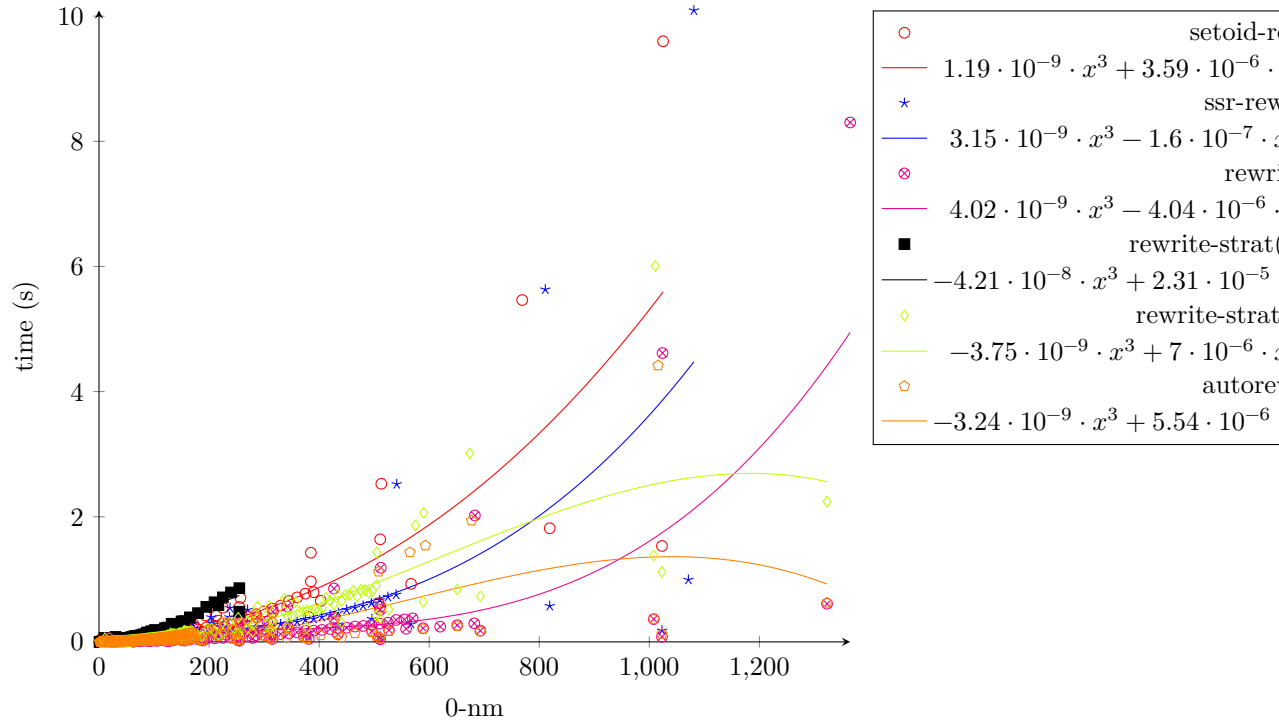Figure 15: timing-rewrite-lift-lets-map param-1-n 1, param-2-m 1

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
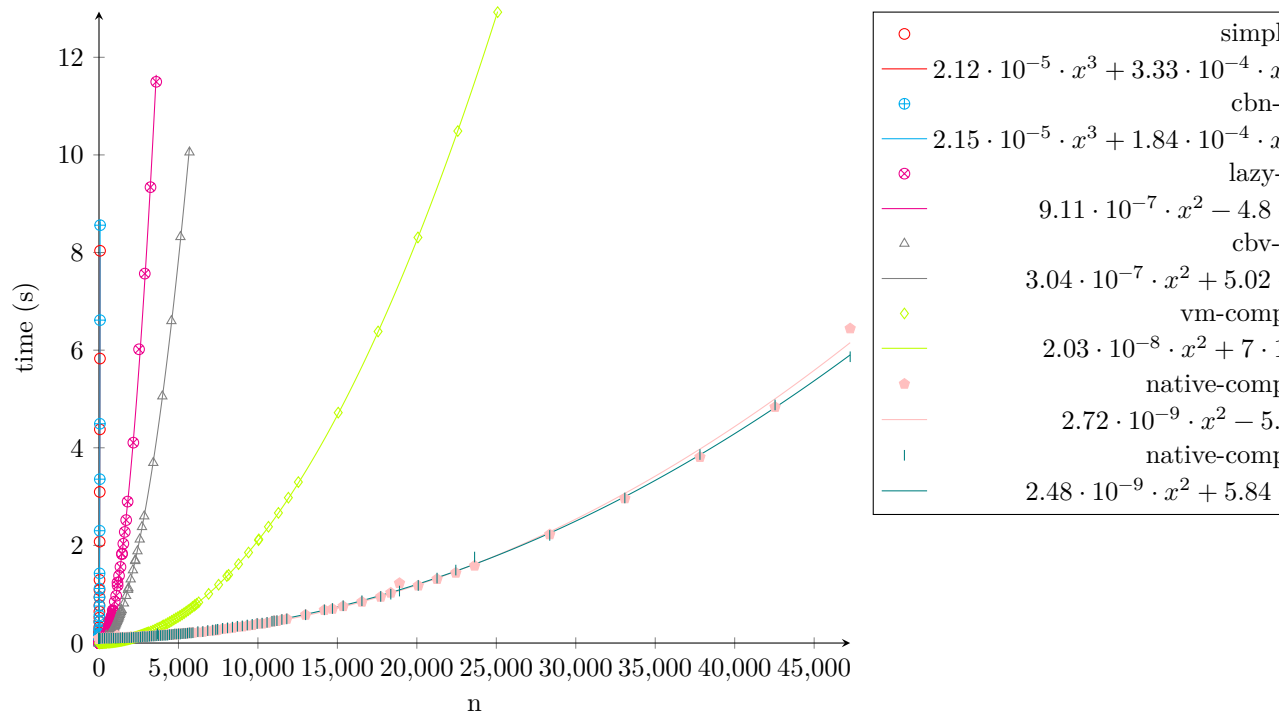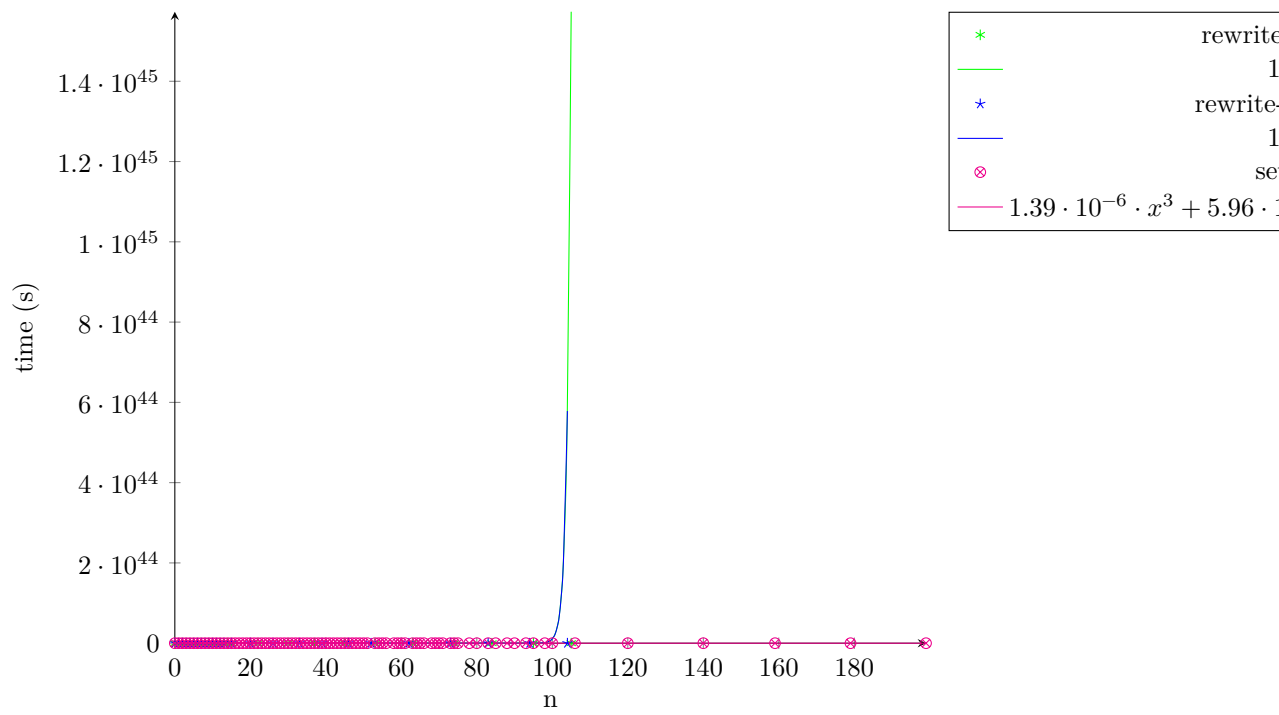
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Figure 17: timing-sieve-of-eratosthenes

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

time (s)

20

18

16

14

12

10

8

6

4

2

0

0   500   1,000   1,500   2,000   2,500   3,000

n

abstract-real
$2.71 \cdot 10^{-6} \cdot x^2 - 1.59 \cdot 10^{-3}$

fast-rewrite-real
$2.42 \cdot 10^{-6} \cdot x^2 - 1.63 \cdot 10^{-3}$

check-pf-cast-real
$3.68 \cdot 10^{-7} \cdot x^2 - 2.91 \cdot 10^{-4} \cdot x$

type-pf-cast-real
$3.71 \cdot 10^{-7} \cdot x^2 - 2.87 \cdot 10^{-4} \cdot x$

close-abstract-real
$2.83 \cdot 10^{-7} \cdot x^2 + 4.27 \cdot 10^{-5} \cdot x$

type-admit-real
$3.81 \cdot 10^{-7} \cdot x^2 - 3.12 \cdot 10^{-4} \cdot x$

check-admit-cast-real
$3.78 \cdot 10^{-7} \cdot x^2 - 3.06 \cdot 10^{-4} \cdot x$

refine-real
$3.37 \cdot 10^{-7} \cdot x^2 - 2.6 \cdot 10^{-4} \cdot x$

$4.4 \cdot 10^{-4} \cdot x - 5.27$

type-admit-cast-real
$3.32 \cdot 10^{-7} \cdot x^2 - 2.29 \cdot 10^{-4} \cdot x$

check-admit-real
$2.54 \cdot 10^{-7} \cdot x^2 - 1.32 \cdot 10^{-4} \cdot x$

build-eval-thunk-real
$1.13 \cdot 10^{-4} \cdot x - 4.9$

build-thunk-real
$1.12 \cdot 10^{-4} \cdot x - 5.97$

check-I-real
$2 \cdot 10^{-5} \cdot x - 5.61 \cdot 1$

type-I-real
$1.92 \cdot 10^{-5} \cdot x - 6.2$

build-I-real
$1.12 \cdot 10^{-5} \cdot x - 5.73$

build-pf-cast-real
$9.79 \cdot 10^{-6} \cdot x - 4.12$

build-admit-real
$9.81 \cdot 10^{-6} \cdot x - 4.91$

build-admit-cast-real
$9.79 \cdot 10^{-6} \cdot x - 3.71$

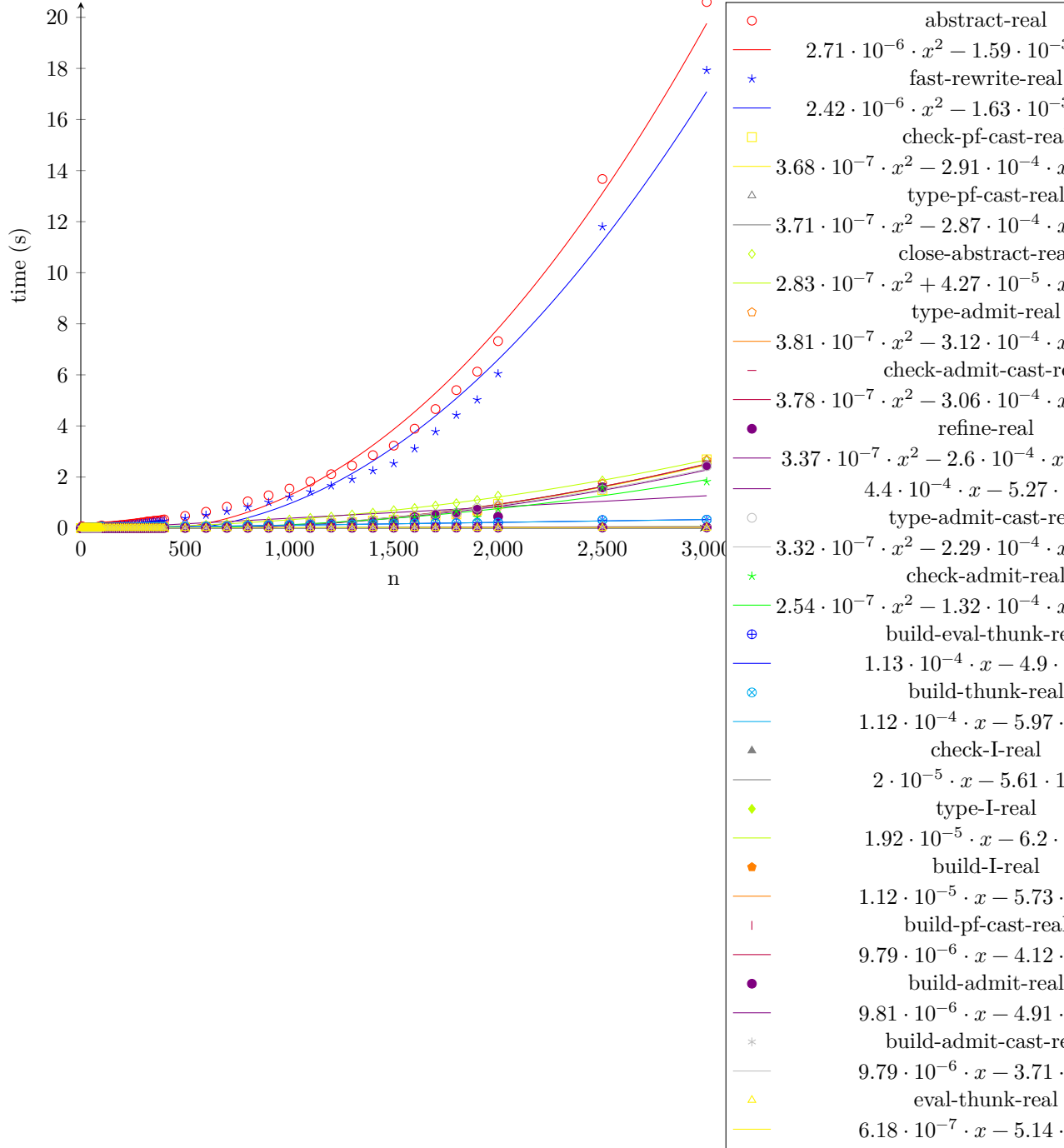eval-thunk-real
$6.18 \cdot 10^{-7} \cdot x - 5.14$

Figure 19: timing-rewrite-repeated-app-fast-rewrite-ltac2

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