Figure 1: timing-pattern

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

The legend of the figure contains:

- abstract-real
- $9.78 \cdot 10^{-8} \cdot x^2 + 2.59 \cdot 10^{-4} \cdot$
- abstract-user
- $9.74 \cdot 10^{-8} \cdot x^2 + 2.59 \cdot 10^{-4} \cdot$
- close-abstract-real
- $9.8 \cdot 10^{-8} \cdot x^2 + 1.78 \cdot 10^{-4} \cdot x$
- close-abstract-user
- $9.76 \cdot 10^{-8} \cdot x^2 + 1.78 \cdot 10^{-4} \cdot x$
- exact-real
- $7.81 \cdot 10^{-5} \cdot x - 3.8 \cdot$
- exact-user
- $7.69 \cdot 10^{-5} \cdot x - 3.46 \cdot$
- abstract-sys
- close-abstract-sys
- exact-sys
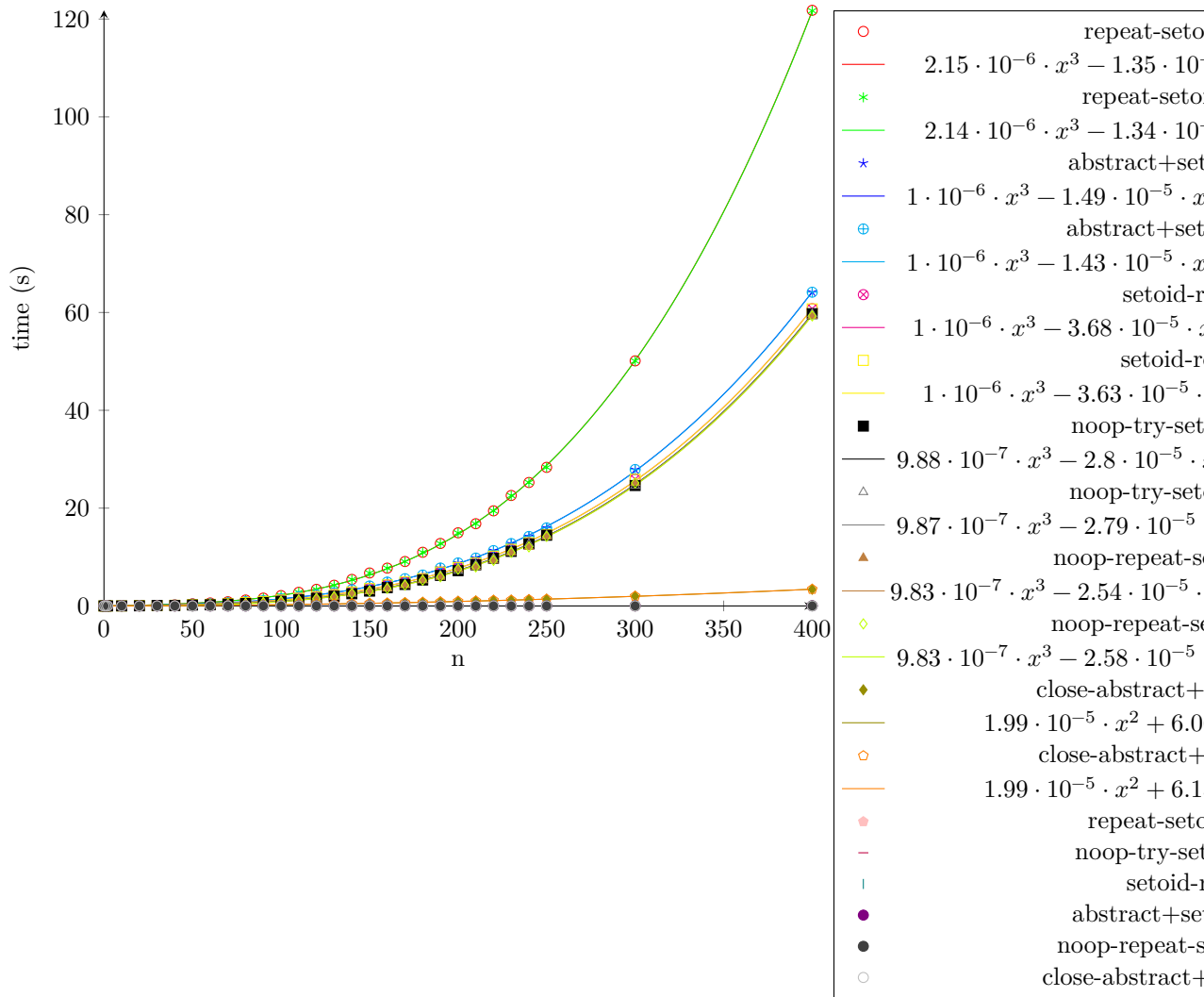
Figure 3: timing-repeat-setoid-rewrite-under-binders

3
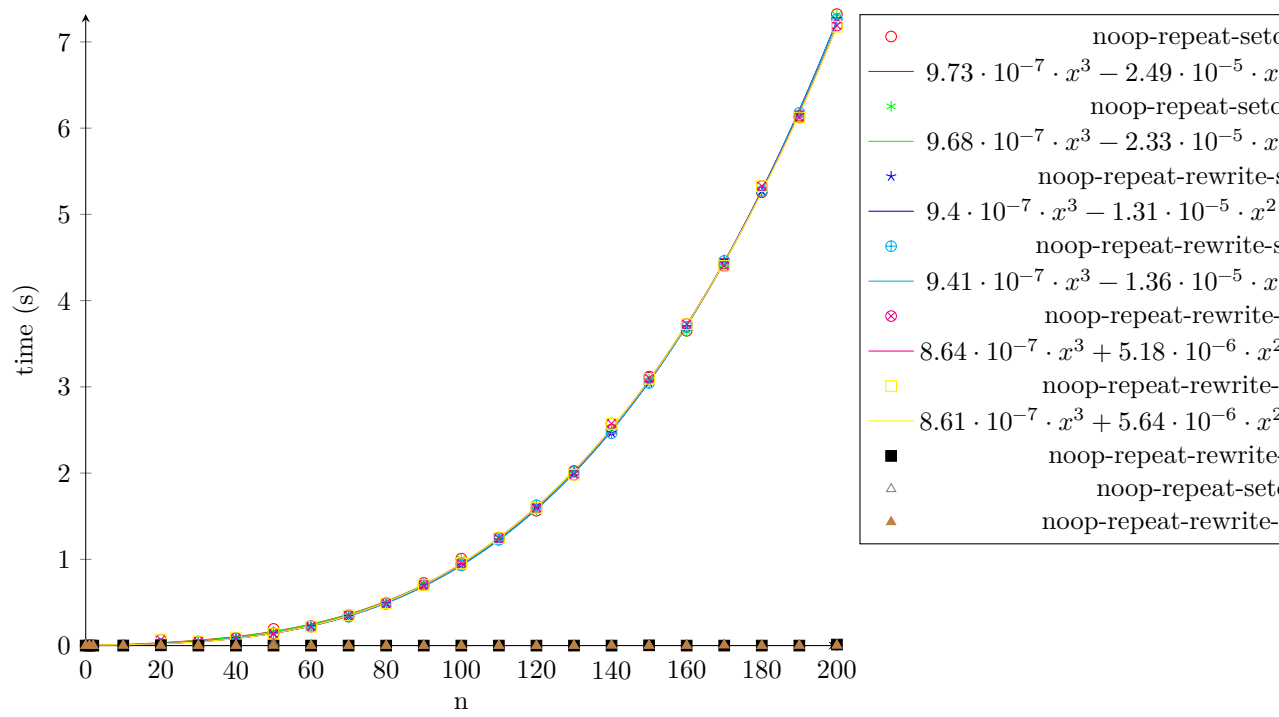
Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

The figure contains the following legend entries and fitted curves:

- noop-repeat-set○ — $9.73 \cdot 10^{-7} \cdot x^3 - 2.49 \cdot 10^{-5} \cdot x$
- noop-repeat-set○ — $9.68 \cdot 10^{-7} \cdot x^3 - 2.33 \cdot 10^{-5} \cdot x$
- noop-repeat-rewrite-s — $9.4 \cdot 10^{-7} \cdot x^3 - 1.31 \cdot 10^{-5} \cdot x^2$
- noop-repeat-rewrite-s — $9.41 \cdot 10^{-7} \cdot x^3 - 1.36 \cdot 10^{-5} \cdot x$
- noop-repeat-rewrite- — $8.64 \cdot 10^{-7} \cdot x^3 + 5.18 \cdot 10^{-6} \cdot x^2$
- noop-repeat-rewrite- — $8.61 \cdot 10^{-7} \cdot x^3 + 5.64 \cdot 10^{-6} \cdot x^2$
- noop-repeat-rewrite-
- noop-repeat-set○
- noop-repeat-rewrite-
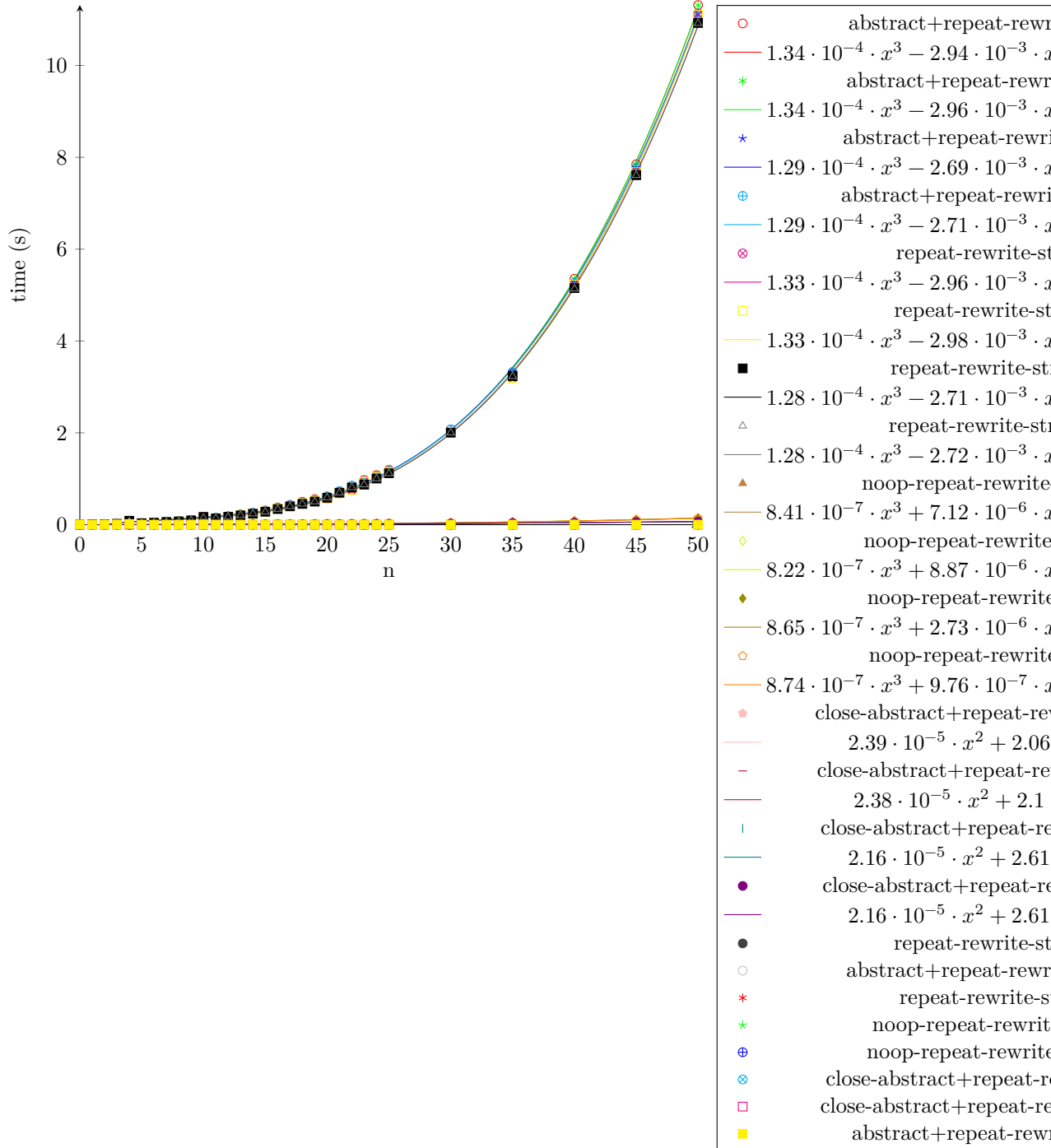
Figure 5: timing-rewrite-strat-under-binders

The legend entries visible:

- abstract+repeat-rewr...
  $1.34 \cdot 10^{-4} \cdot x^3 - 2.94 \cdot 10^{-3} \cdot x$
- abstract+repeat-rewr...
  $1.34 \cdot 10^{-4} \cdot x^3 - 2.96 \cdot 10^{-3} \cdot x$
- abstract+repeat-rewr...
  $1.29 \cdot 10^{-4} \cdot x^3 - 2.69 \cdot 10^{-3} \cdot x$
- abstract+repeat-rewr...
  $1.29 \cdot 10^{-4} \cdot x^3 - 2.71 \cdot 10^{-3} \cdot x$
- repeat-rewrite-st...
  $1.33 \cdot 10^{-4} \cdot x^3 - 2.96 \cdot 10^{-3} \cdot x$
- repeat-rewrite-st...
  $1.33 \cdot 10^{-4} \cdot x^3 - 2.98 \cdot 10^{-3} \cdot x$
- repeat-rewrite-st...
  $1.28 \cdot 10^{-4} \cdot x^3 - 2.71 \cdot 10^{-3} \cdot x$
- repeat-rewrite-st...
  $1.28 \cdot 10^{-4} \cdot x^3 - 2.72 \cdot 10^{-3} \cdot x$
- noop-repeat-rewrite...
  $8.41 \cdot 10^{-7} \cdot x^3 + 7.12 \cdot 10^{-6} \cdot x$
- noop-repeat-rewrite...
  $8.22 \cdot 10^{-7} \cdot x^3 + 8.87 \cdot 10^{-6} \cdot x$
- noop-repeat-rewrite...
  $8.65 \cdot 10^{-7} \cdot x^3 + 2.73 \cdot 10^{-6} \cdot x$
- noop-repeat-rewrite...
  $8.74 \cdot 10^{-7} \cdot x^3 + 9.76 \cdot 10^{-7} \cdot x$
- close-abstract+repeat-re...
  $2.39 \cdot 10^{-5} \cdot x^2 + 2.06$
- close-abstract+repeat-re...
  $2.38 \cdot 10^{-5} \cdot x^2 + 2.1$
- close-abstract+repeat-re...
  $2.16 \cdot 10^{-5} \cdot x^2 + 2.61$
- close-abstract+repeat-re...
  $2.16 \cdot 10^{-5} \cdot x^2 + 2.61$
- repeat-rewrite-st...
- abstract+repeat-rewr...
- repeat-rewrite-s...
- noop-repeat-rewrit...
- noop-repeat-rewrite...
- close-abstract+repeat-r...
- close-abstract+repeat-re...
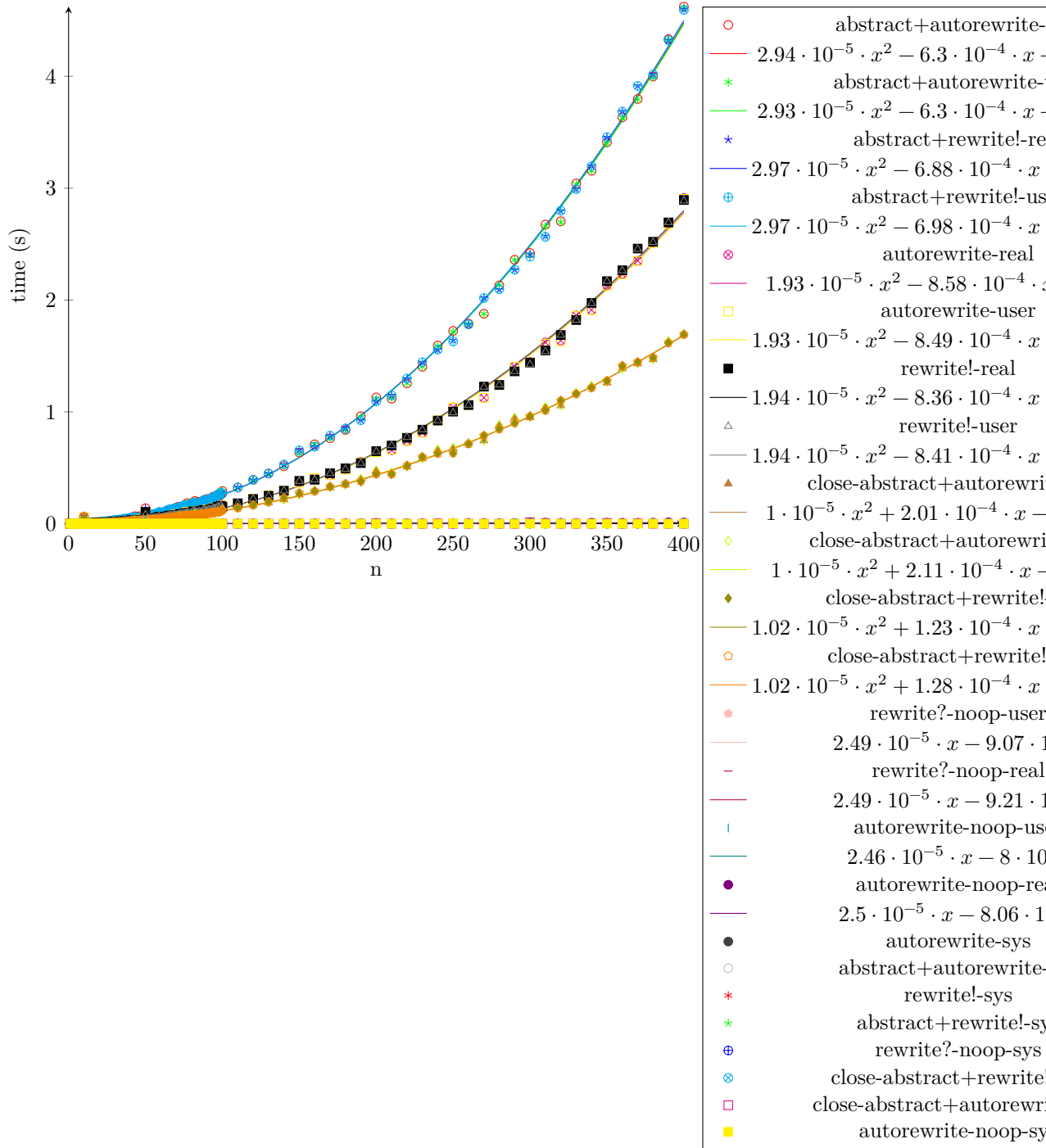- abstract+repeat-rewr...

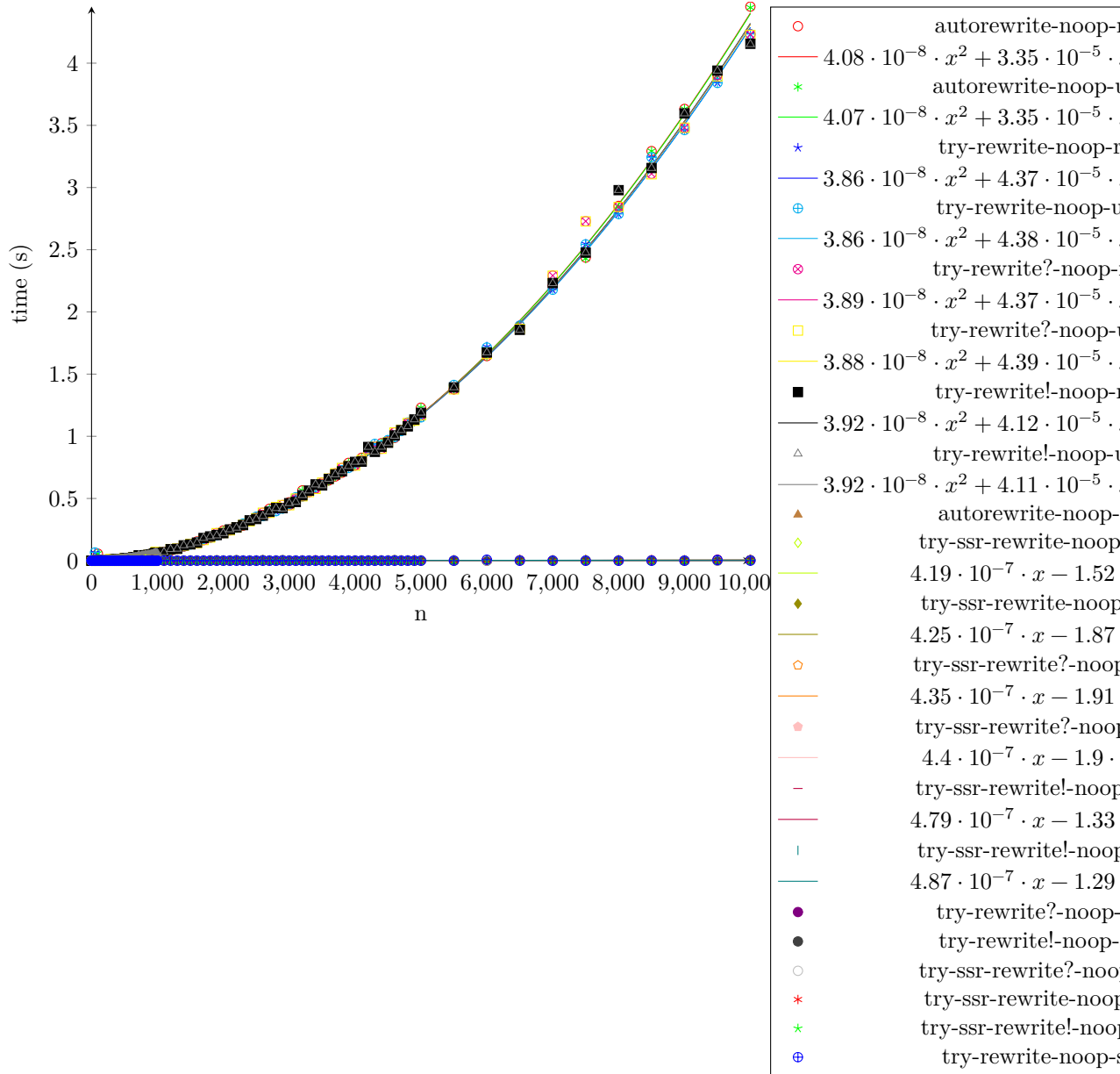Figure 6: timing-rewrite-repeated-app-autorewrite

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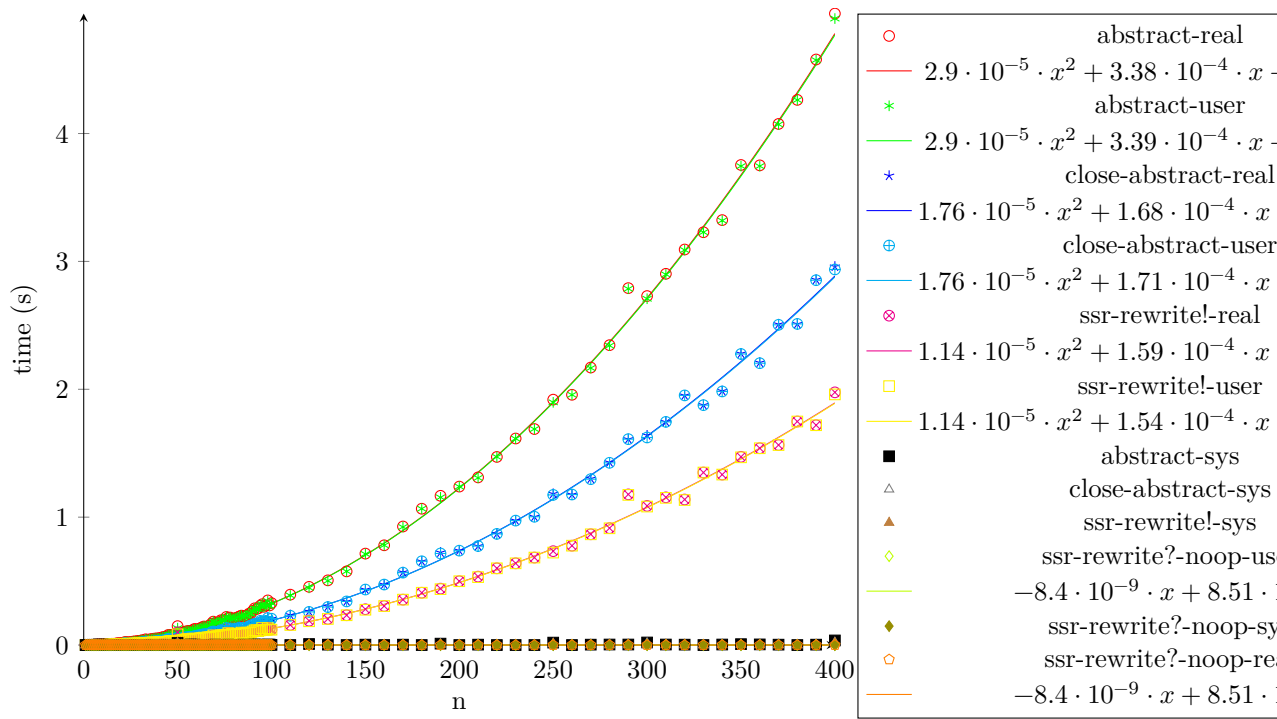Figure 7: timing-rewrite-repeated-app-autorewrite-noop
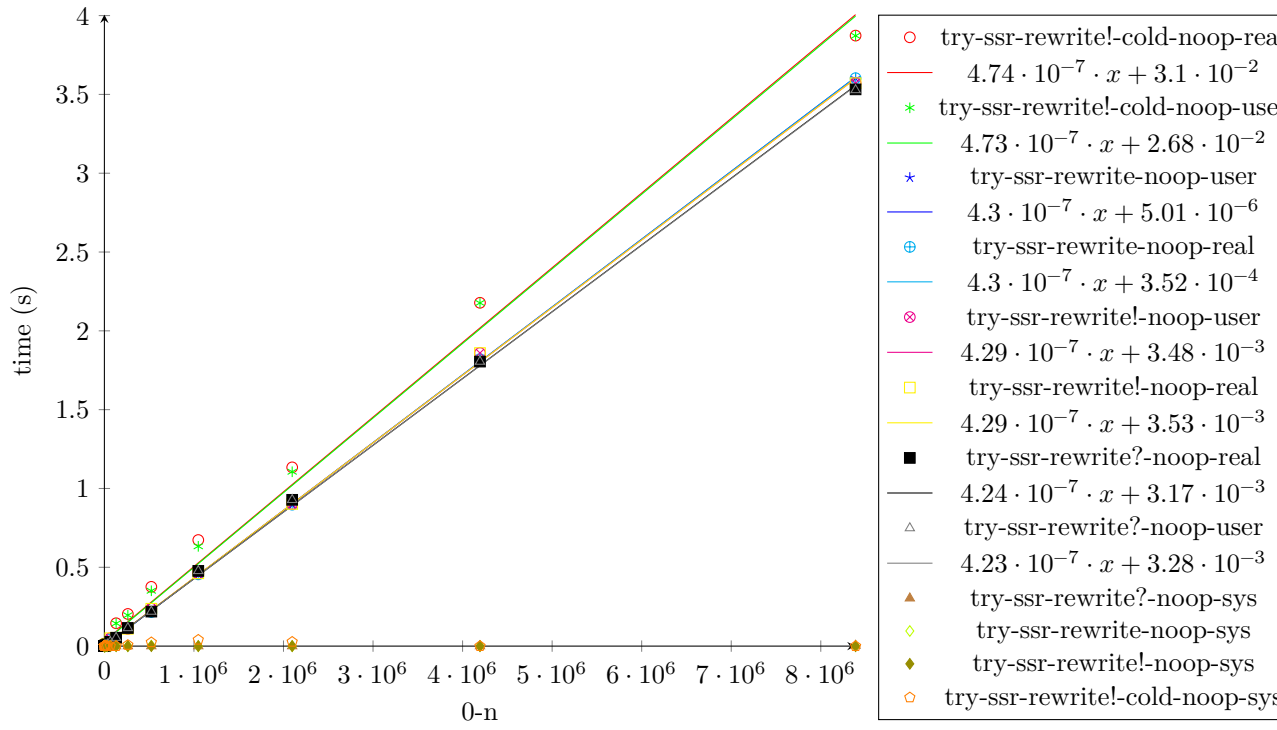
Figure 8: timing-rewrite-repeated-app-ssrrewrite

Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1
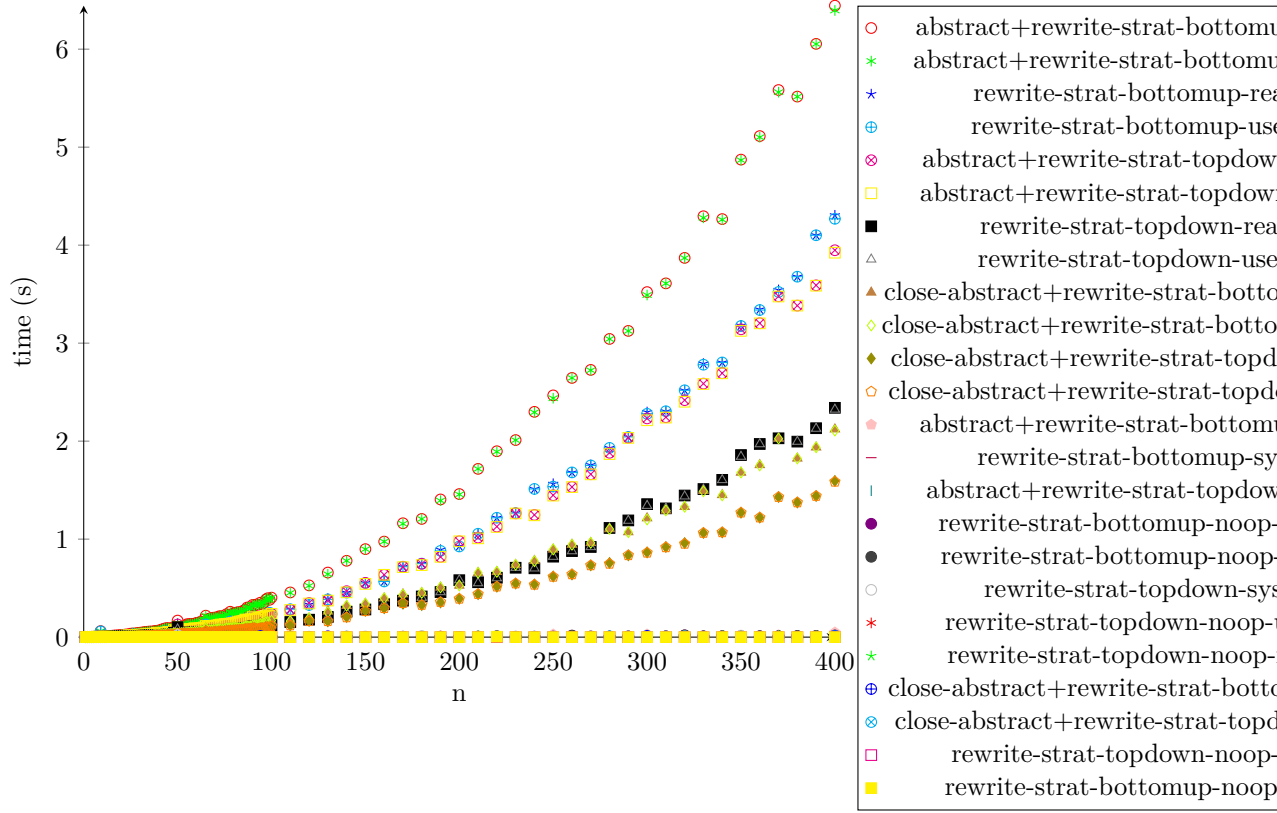
Figure 10: timing-rewrite-repeated-app-rewrite-strat

time (s)

n

abstract+rewrite-strat-bottomu

abstract+rewrite-strat-bottomu

rewrite-strat-bottomup-rea

rewrite-strat-bottomup-use

abstract+rewrite-strat-topdow

abstract+rewrite-strat-topdow

rewrite-strat-topdown-rea

rewrite-strat-topdown-use

close-abstract+rewrite-strat-botto

close-abstract+rewrite-strat-botto

close-abstract+rewrite-strat-topd

close-abstract+rewrite-strat-topd

abstract+rewrite-strat-bottomu

rewrite-strat-bottomup-sy

abstract+rewrite-strat-topdow

rewrite-strat-bottomup-noop-

rewrite-strat-bottomup-noop-

rewrite-strat-topdown-sy

rewrite-strat-topdown-noop-

rewrite-strat-topdown-noop-

close-abstract+rewrite-strat-botto

close-abstract+rewrite-strat-topd

rewrite-strat-topdown-noop-
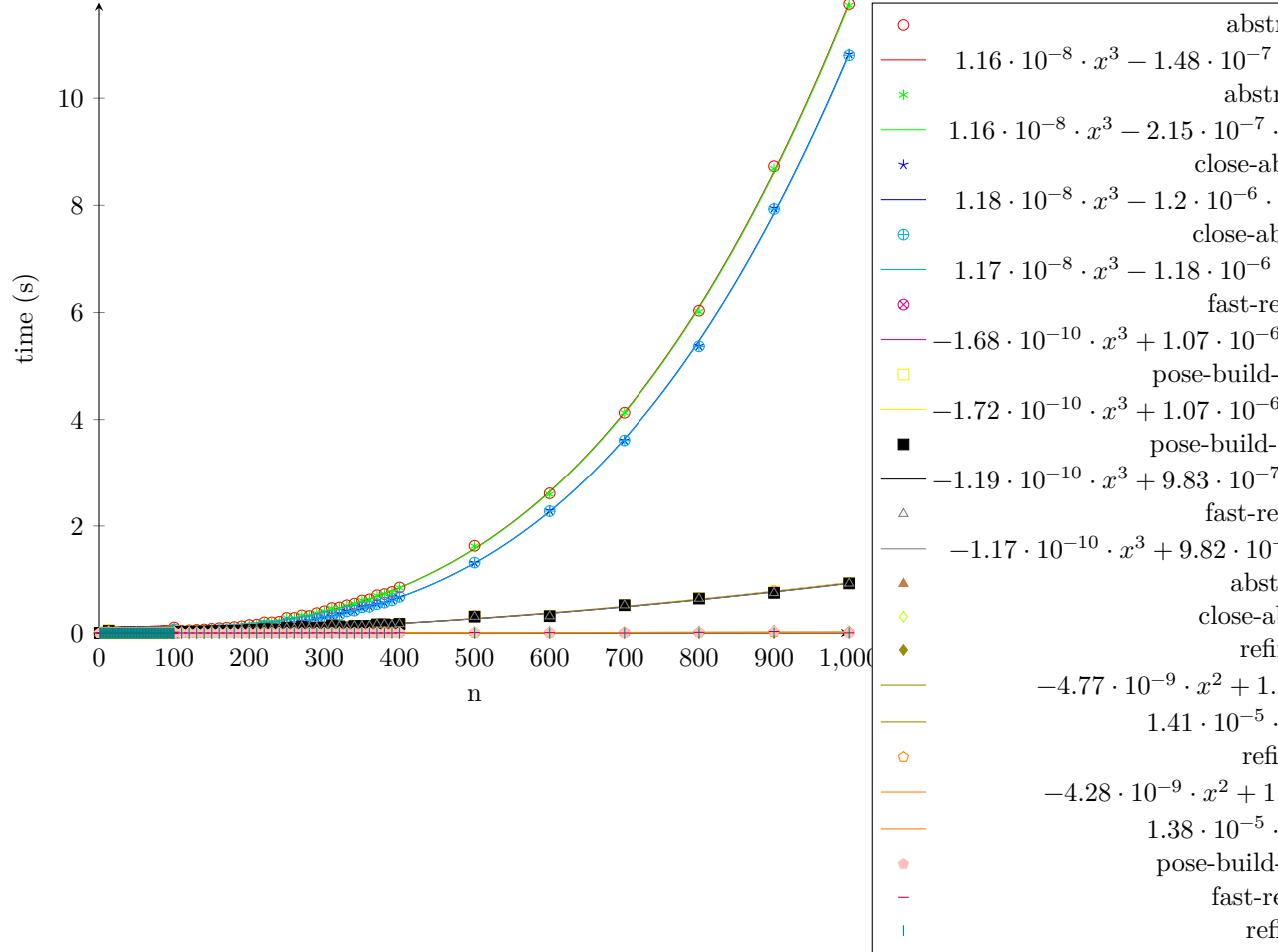
rewrite-strat-bottomup-noop
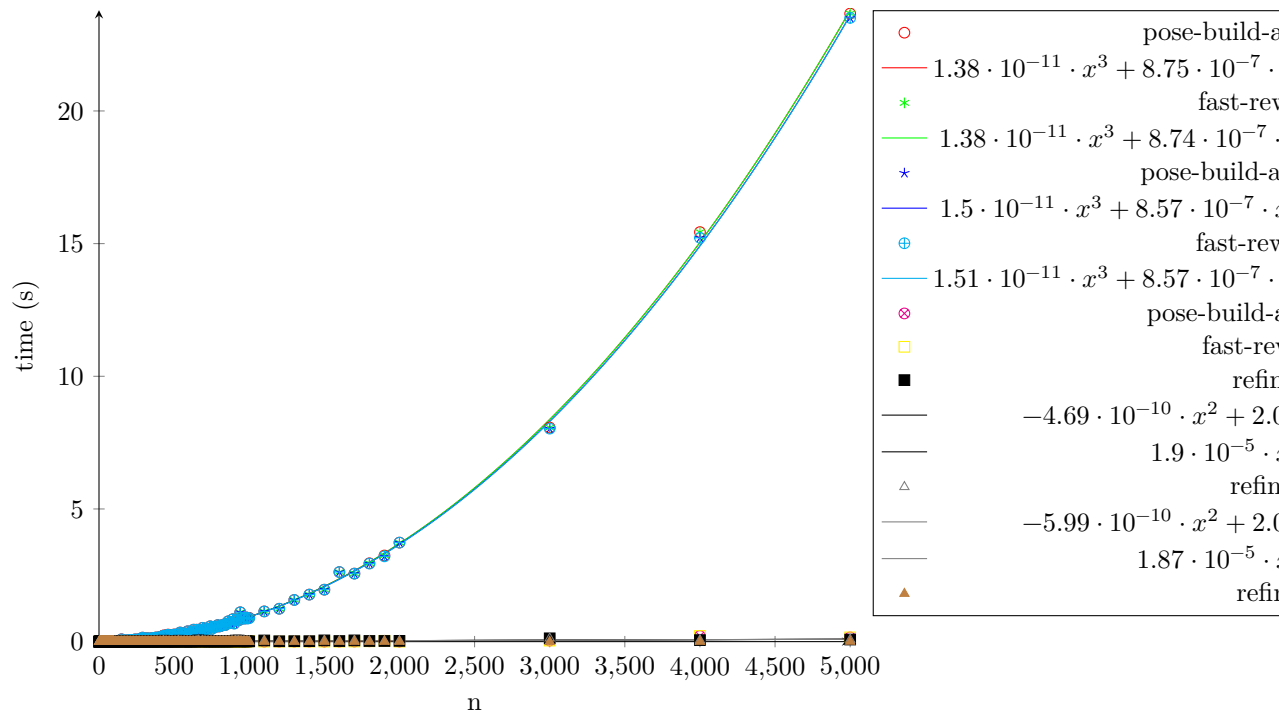
Figure 11: timing-rewrite-repeated-app-fast-rewrite

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

time (s)

n

abstract-real
$2.08 \cdot 10^{-6} \cdot x^2 + 1.54 \cdot 10^{-4} \cdot x$

abstract-user
$2.08 \cdot 10^{-6} \cdot x^2 + 1.48 \cdot 10^{-4} \cdot x$

fast-rewrite-real
$1.7 \cdot 10^{-6} \cdot x^2 + 9.08 \cdot 10^{-5} \cdot x$

fast-rewrite-user
$1.7 \cdot 10^{-6} \cdot x^2 + 8.38 \cdot 10^{-5} \cdot x$

close-abstract-real
$3.83 \cdot 10^{-7} \cdot x^2 + 6.2 \cdot 10^{-5} \cdot x$

close-abstract-user
$3.82 \cdot 10^{-7} \cdot x^2 + 6.26 \cdot 10^{-5} \cdot x$

type-pf-cast-user
$2.41 \cdot 10^{-7} \cdot x^2 - 1.21 \cdot 10^{-5} \cdot x$

type-pf-cast-real
$2.4 \cdot 10^{-7} \cdot x^2 - 1.05 \cdot 10^{-5} \cdot x$

check-pf-cast-real
$2.44 \cdot 10^{-7} \cdot x^2 - 2.54 \cdot 10^{-5} \cdot x$

check-pf-cast-user
$2.43 \cdot 10^{-7} \cdot x^2 - 2.55 \cdot 10^{-5} \cdot x$

refine-real
$2.39 \cdot 10^{-7} \cdot x^2 + 5.5 \cdot 10^{-6} \cdot x$
$5.03 \cdot 10^{-4} \cdot x - 5.39 \cdot$

check-admit-user
$2.44 \cdot 10^{-7} \cdot x^2 - 1.31 \cdot 10^{-5} \cdot x$

check-admit-real
$2.44 \cdot 10^{-7} \cdot x^2 - 1.22 \cdot 10^{-5} \cdot x$

refine-user
$2.39 \cdot 10^{-7} \cdot x^2 + 5.39 \cdot 10^{-6} \cdot x$
$5.02 \cdot 10^{-4} \cdot x - 5.39 \cdot$

type-admit-real
$2.41 \cdot 10^{-7} \cdot x^2 - 3.58 \cdot 10^{-6} \cdot x$

type-admit-user
$2.41 \cdot 10^{-7} \cdot x^2 - 3.76 \cdot 10^{-6} \cdot x$

check-admit-cast-user
$2.46 \cdot 10^{-7} \cdot x^2 - 2.8 \cdot 10^{-5} \cdot x$

check-admit-cast-real
$2.45 \cdot 10^{-7} \cdot x^2 - 2.64 \cdot 10^{-5} \cdot x$

type-admit-cast-real
$2.43 \cdot 10^{-7} \cdot x^2 - 1.7 \cdot 10^{-5} \cdot x$

type-admit-cast-user
$2.42 \cdot 10^{-7} \cdot x^2 - 1.7 \cdot 10^{-5} \cdot x$

build-eval-thunk-user
$1.16 \cdot 10^{-4} \cdot x - 6 \cdot 1$

build-eval-thunk-real
$1.16 \cdot 10^{-4} \cdot x - 4.4 \cdot$

build-thunk-user
$1.15 \cdot 10^{-4} \cdot x - 6.56 \cdot$

build-thunk-real
$1.15 \cdot 10^{-4} \cdot x - 5.17 \cdot$

type-I-user