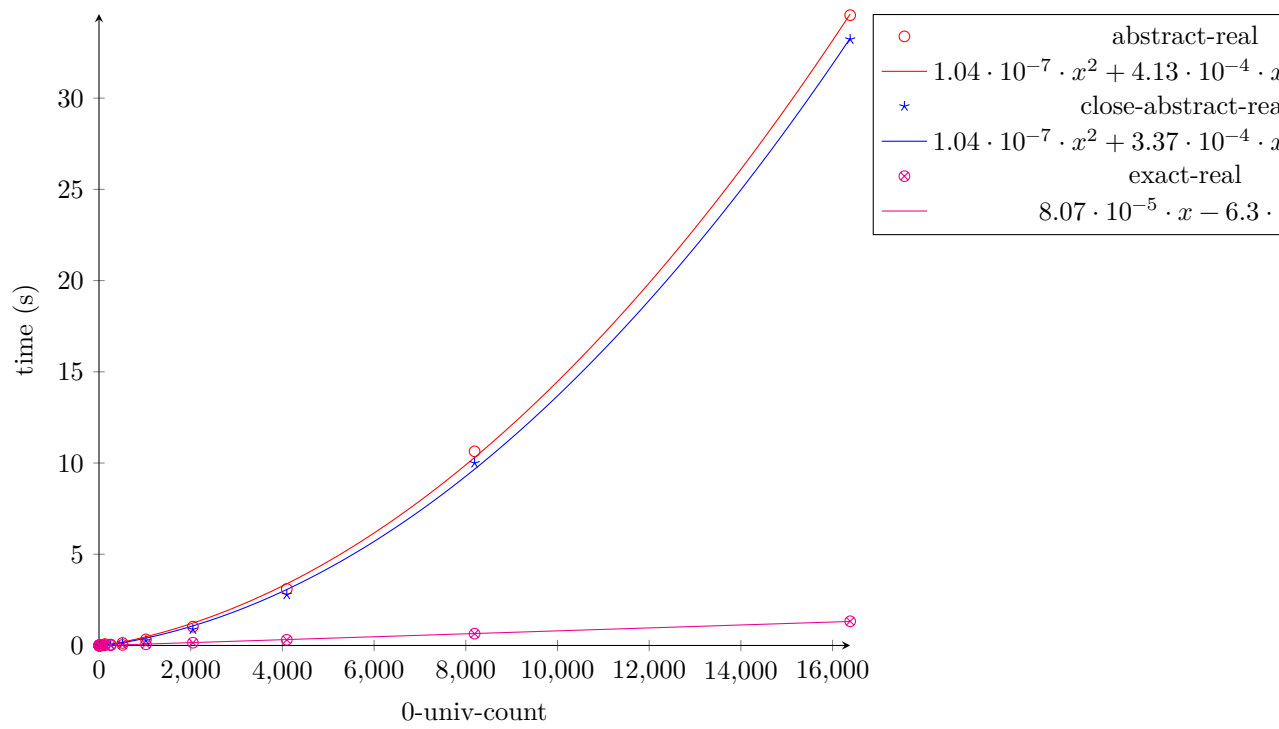Figure 1: timing-pattern

1

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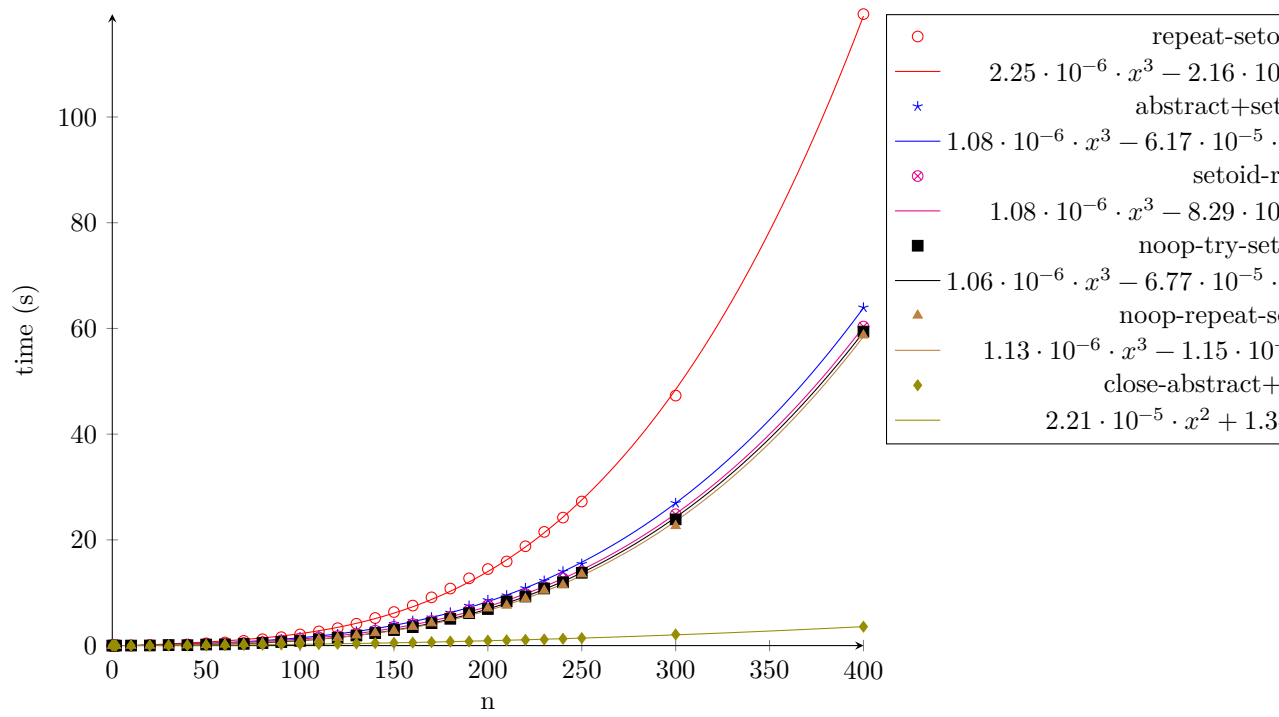
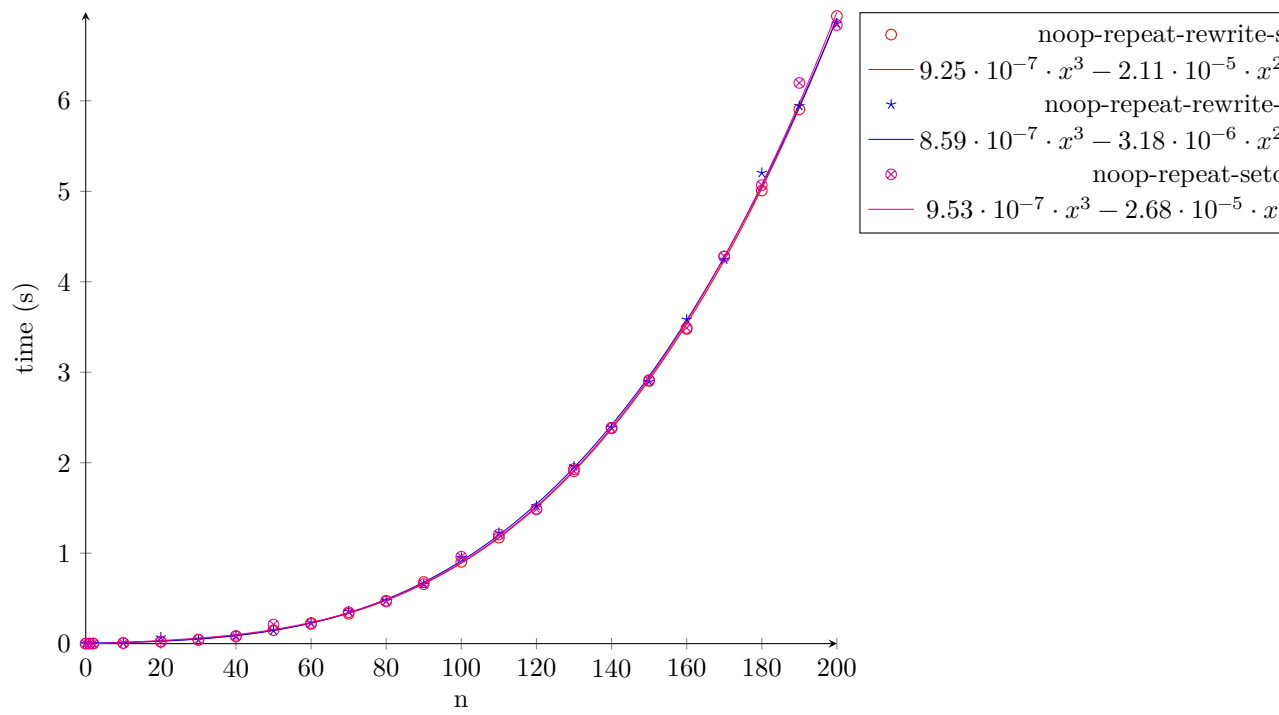Figure 3: timing-repeat-setoid-rewrite-under-binders

3

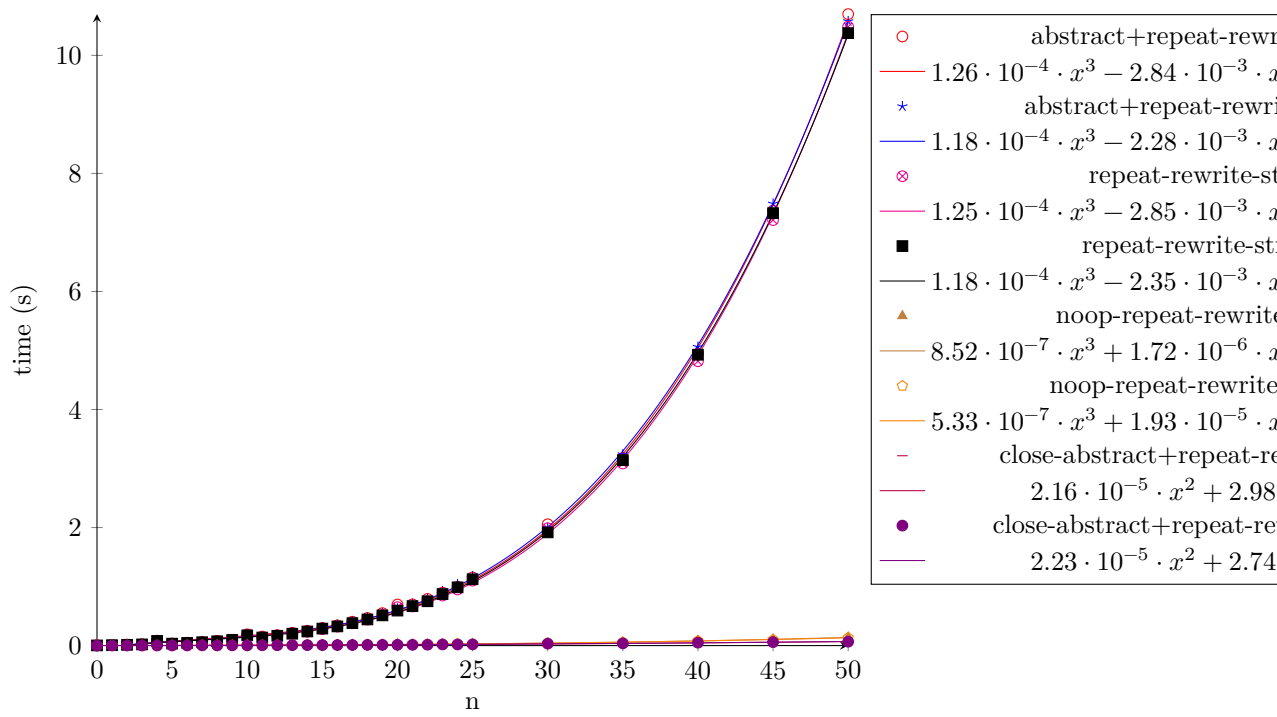Figure 4: timing-repeat-setoid-rewrite-under-binders-noop
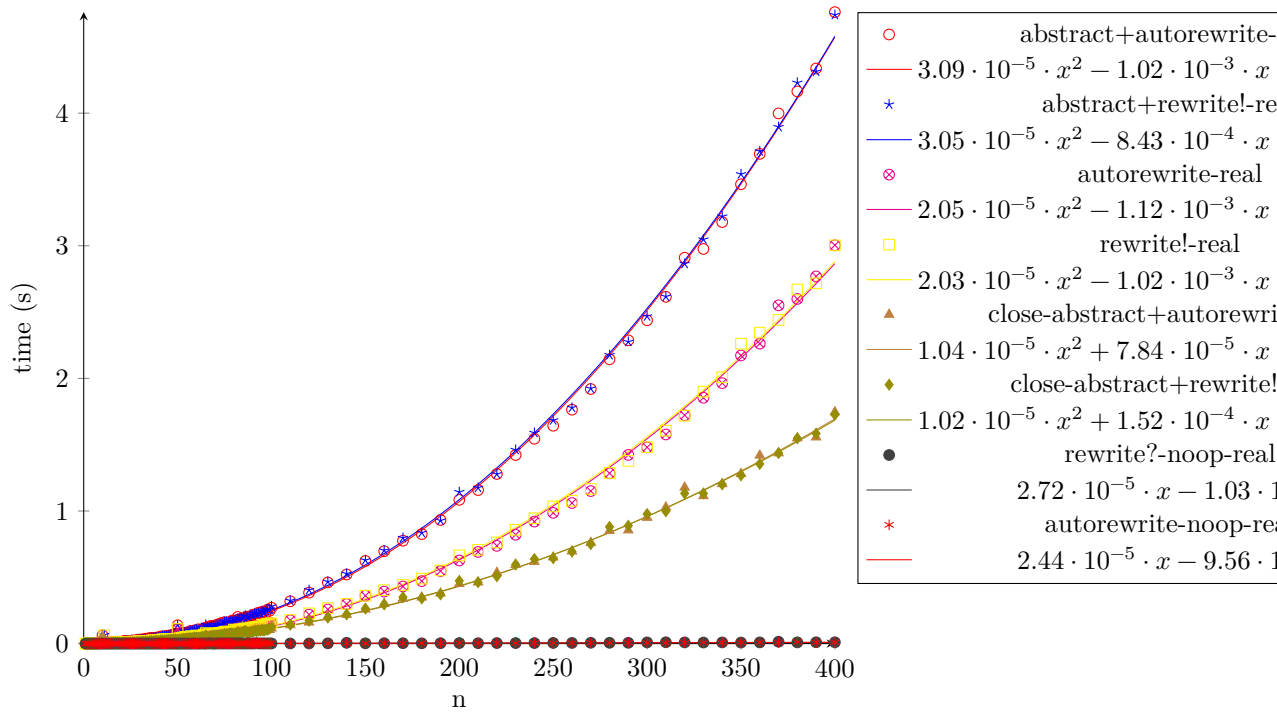
4

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

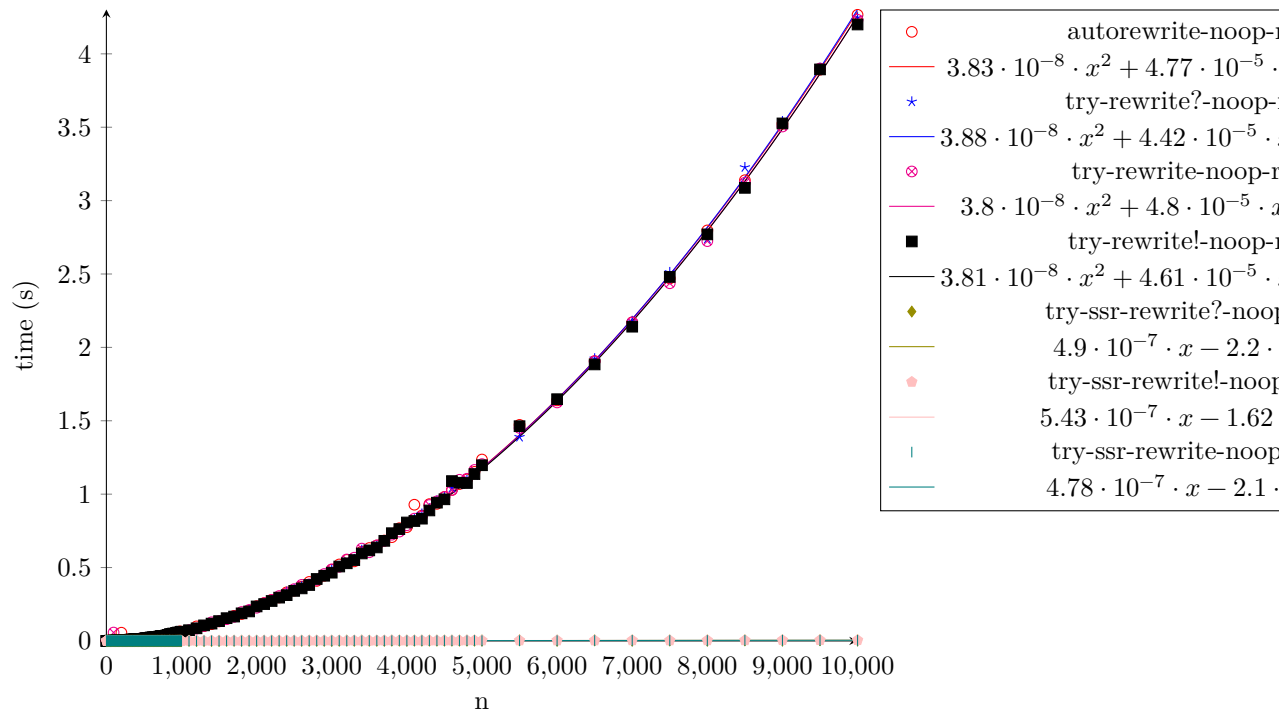Figure 6: timing-rewrite-repeated-app-autorewrite

Figure 7: timing-rewrite-repeated-app-autorewrite-noop
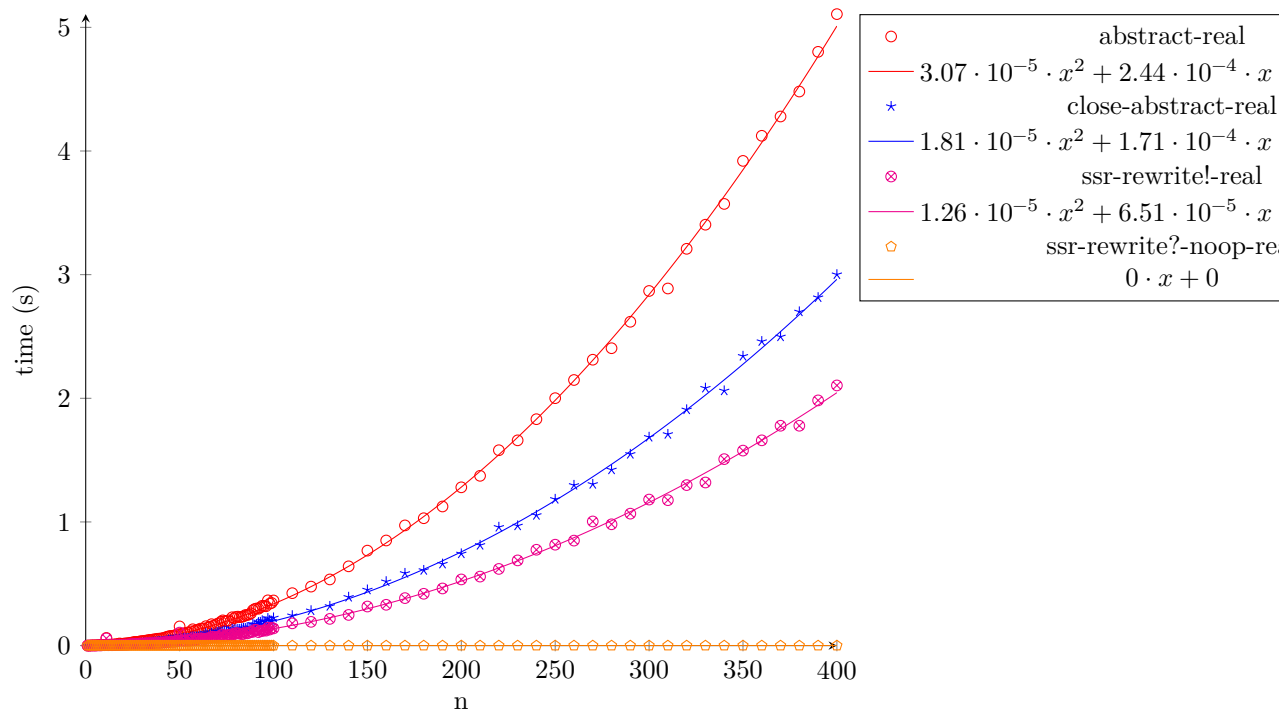
Figure 8: timing-rewrite-repeated-app-ssrrewrite
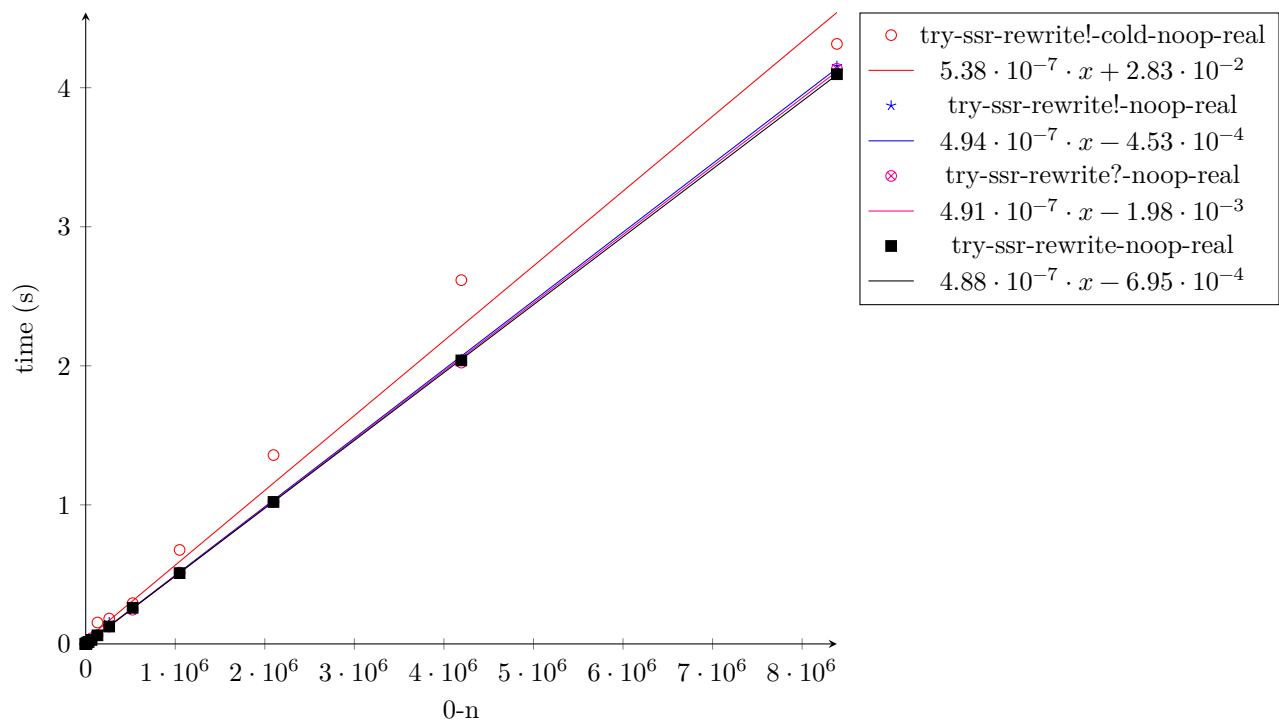
Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1
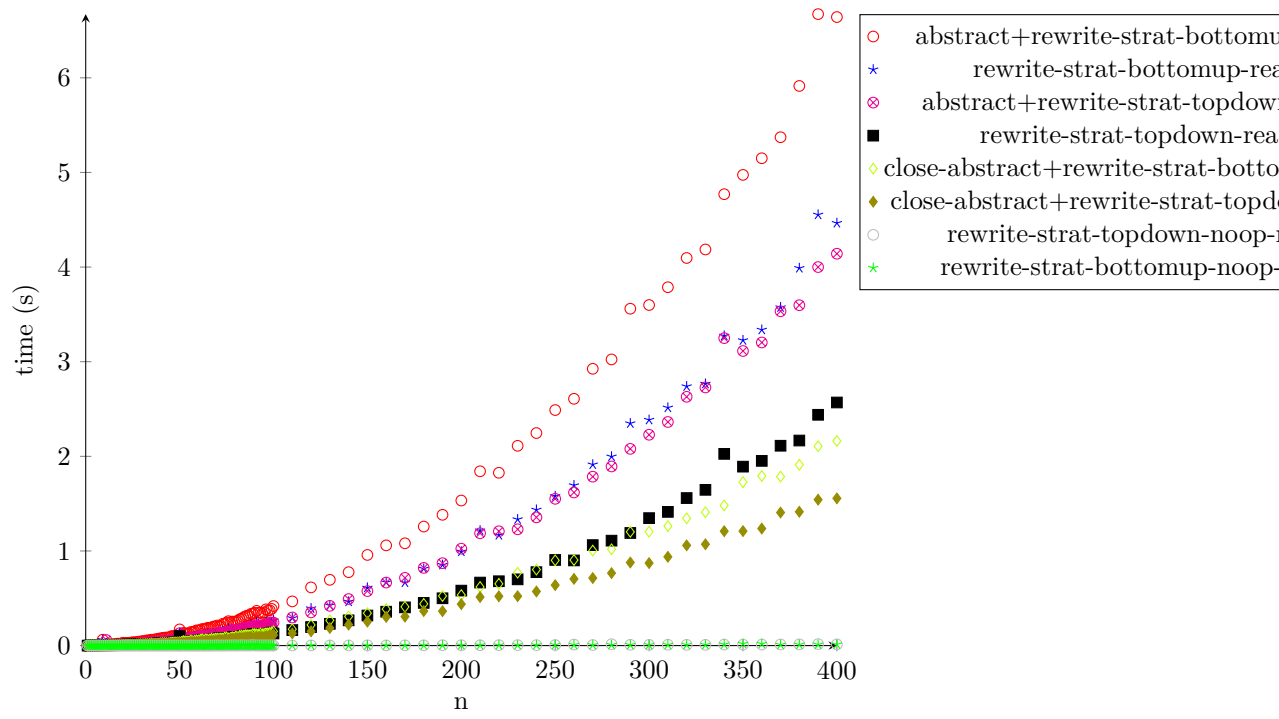
Figure 10: timing-rewrite-repeated-app-rewrite-strat

The chart legend reads:

- abstract+rewrite-strat-bottomu...
- rewrite-strat-bottomup-rea...
- abstract+rewrite-strat-topdow...
- rewrite-strat-topdown-rea...
- close-abstract+rewrite-strat-botto...
- close-abstract+rewrite-strat-topd...
- rewrite-strat-topdown-noop-...
- rewrite-strat-bottomup-noop-...

Axis labels: time (s) on vertical axis, n on horizontal axis.
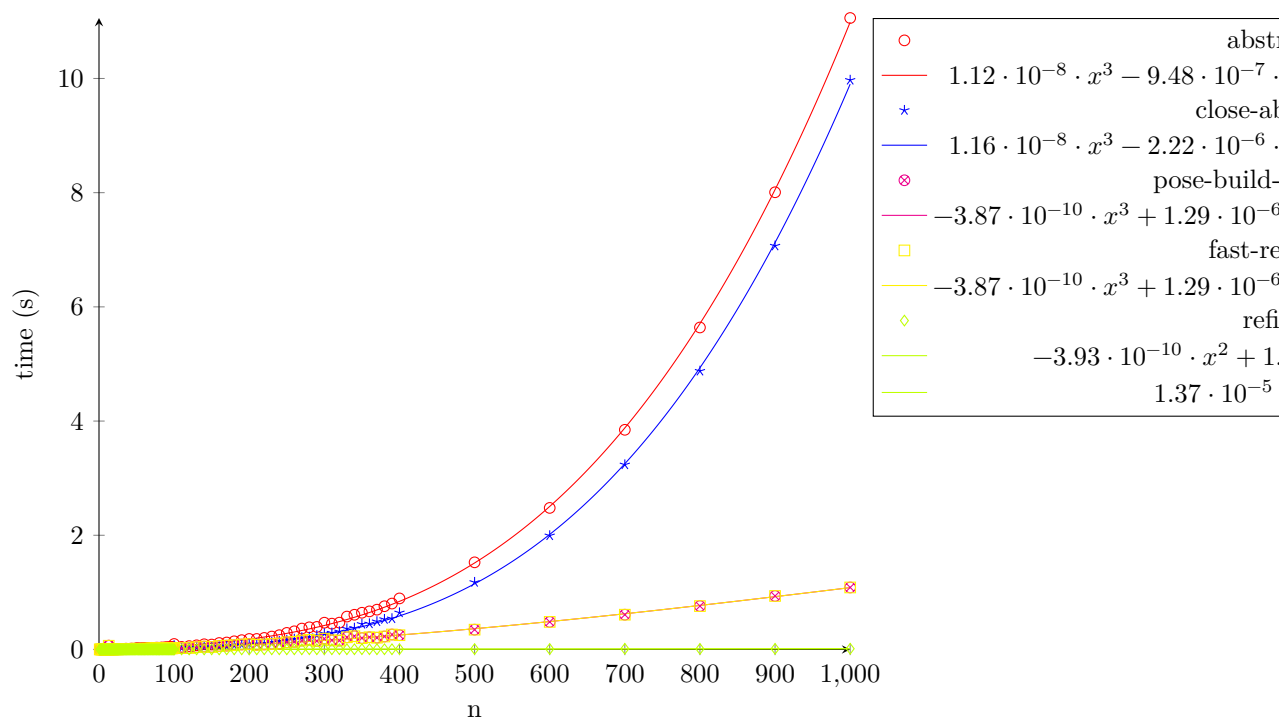
Figure 11: timing-rewrite-repeated-app-fast-rewrite
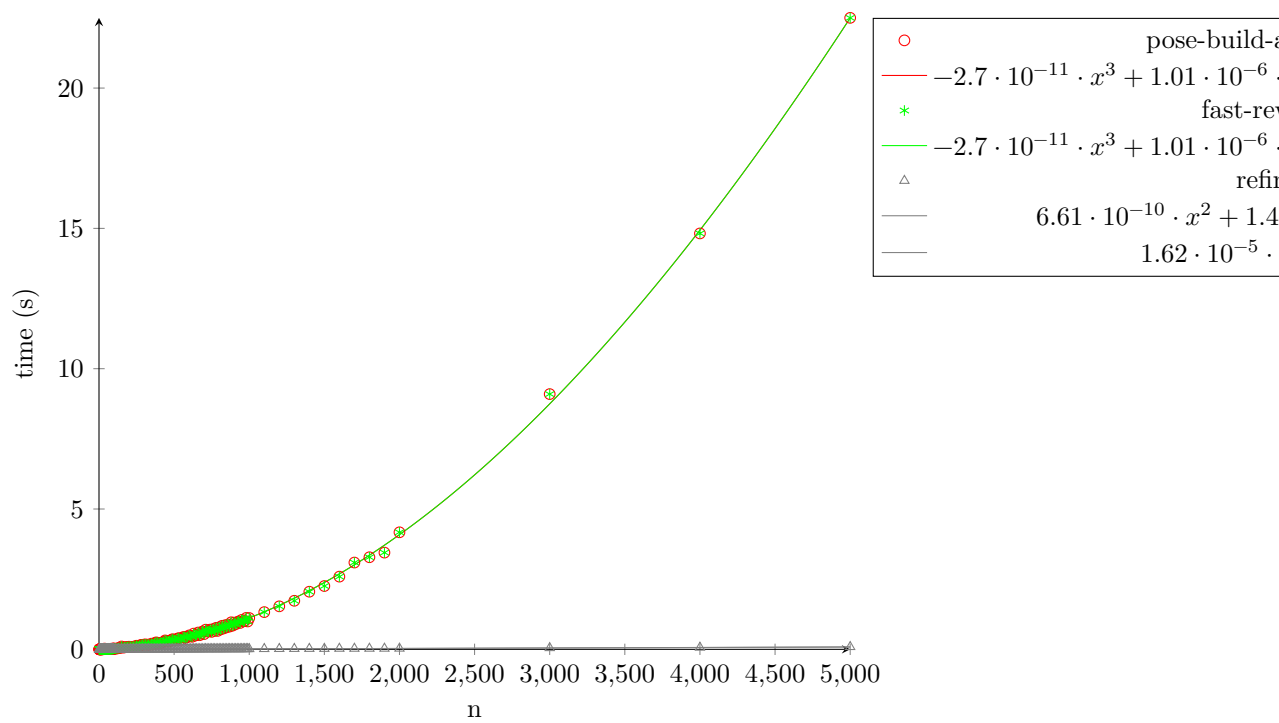
Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract
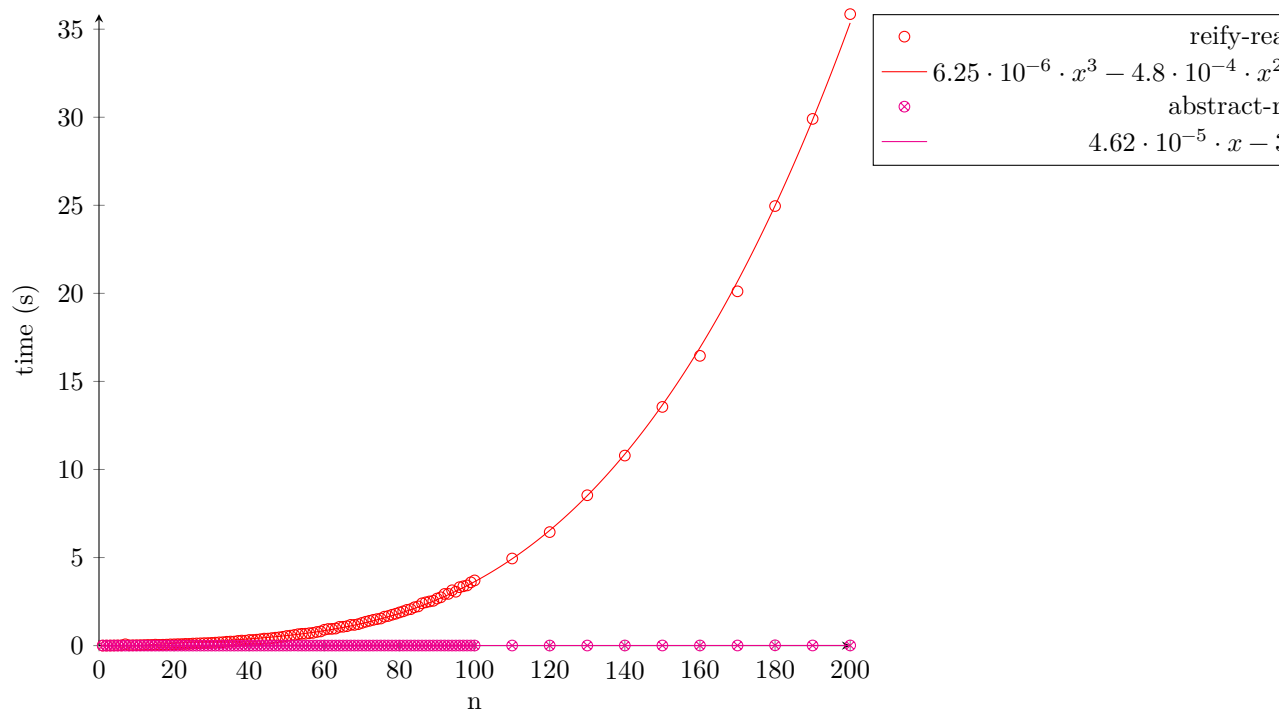
Figure 13: timing-typeclass-reification-let-in-HOAS

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

Figure 17: timing-sieve-of-eratosthenes

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

time (s)

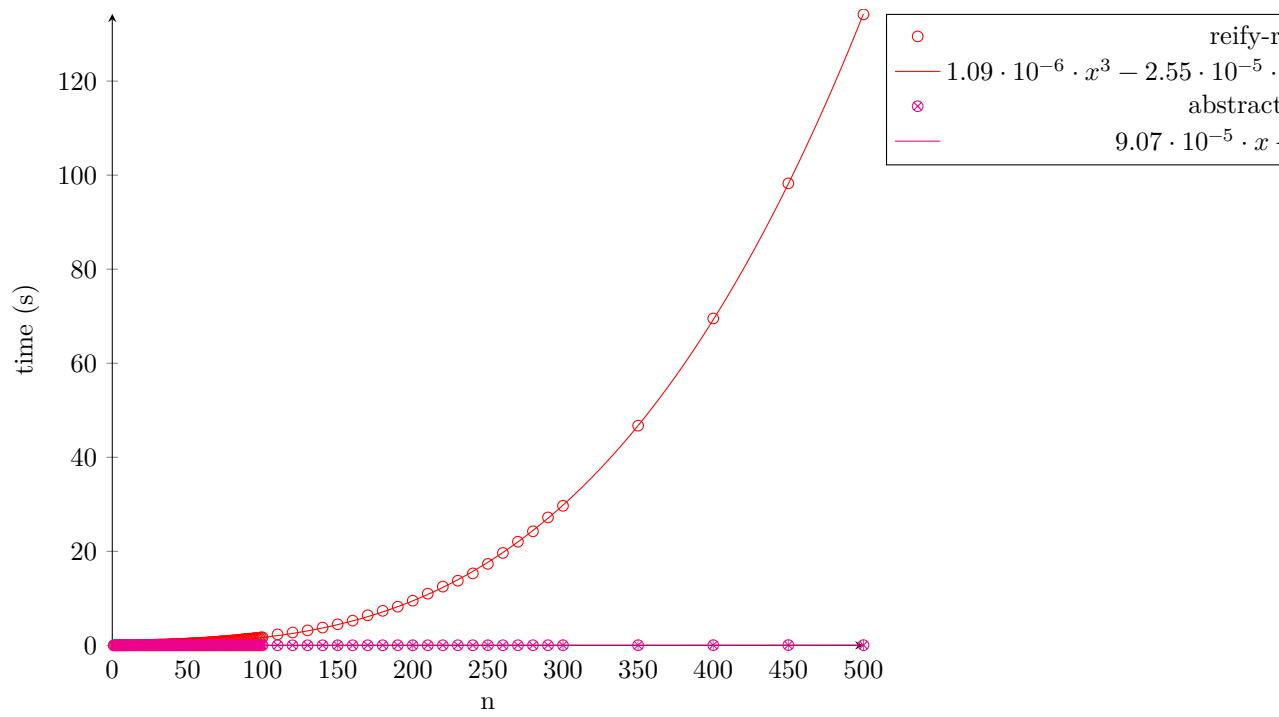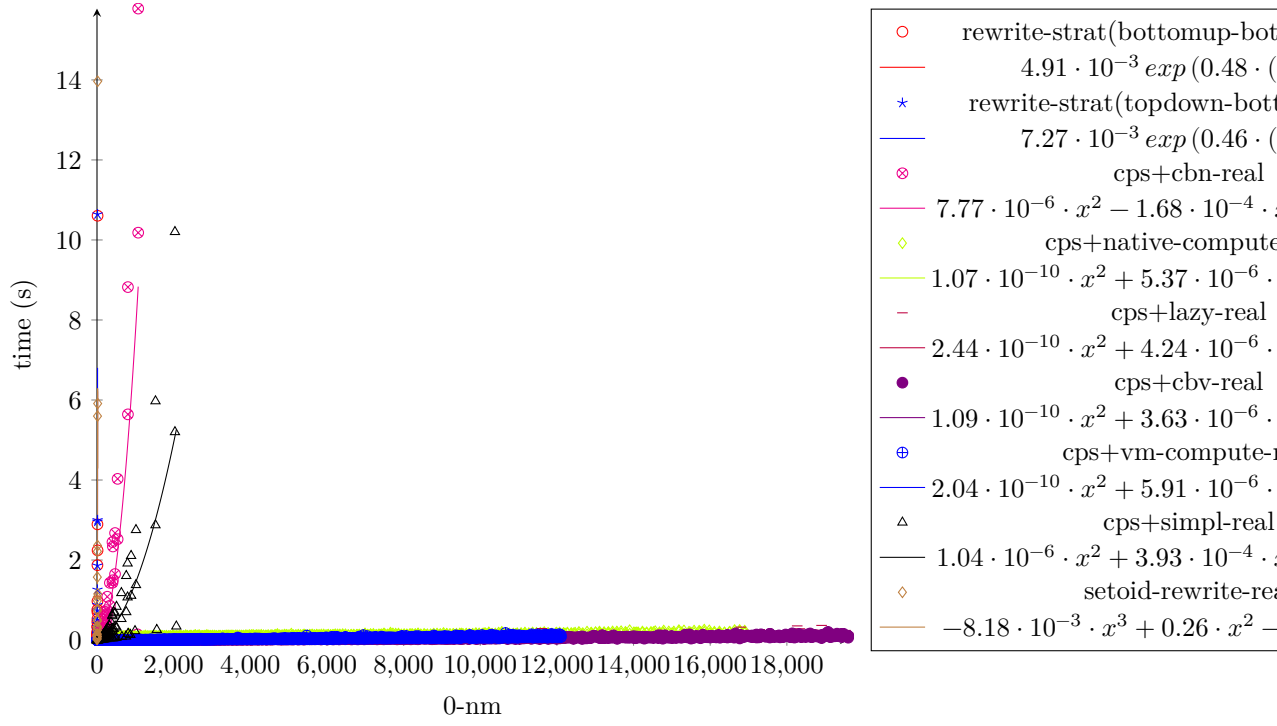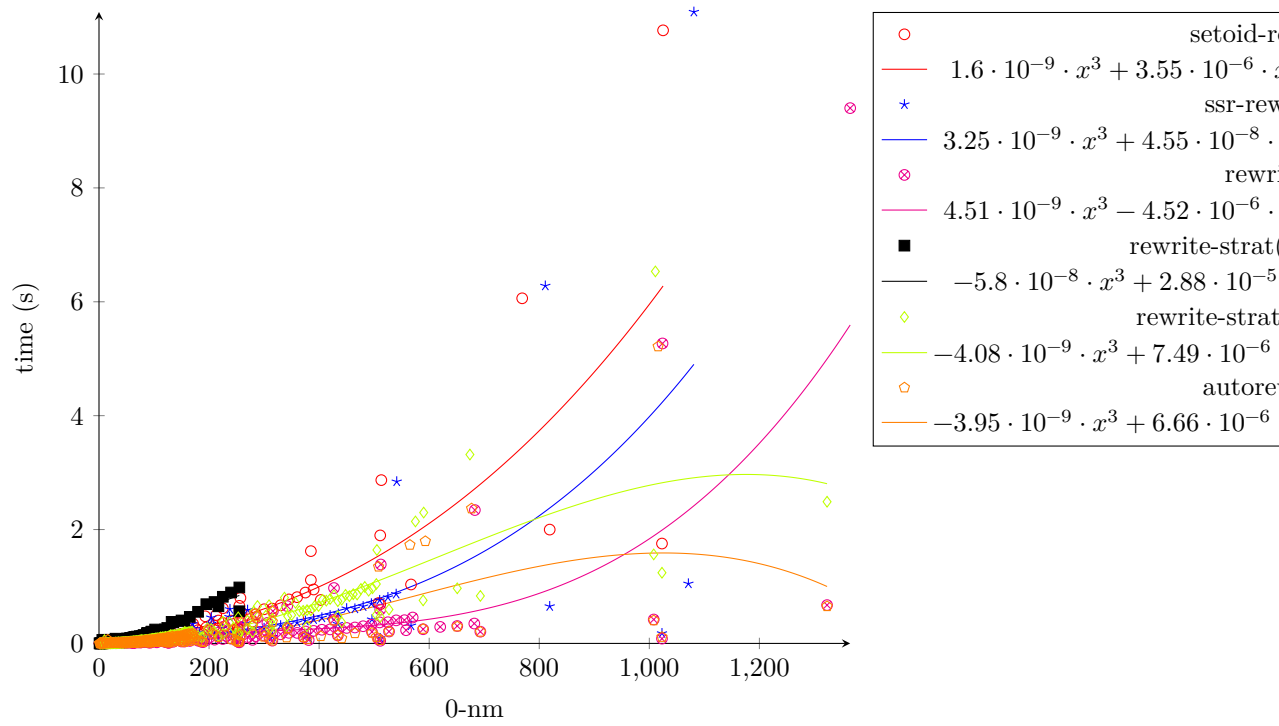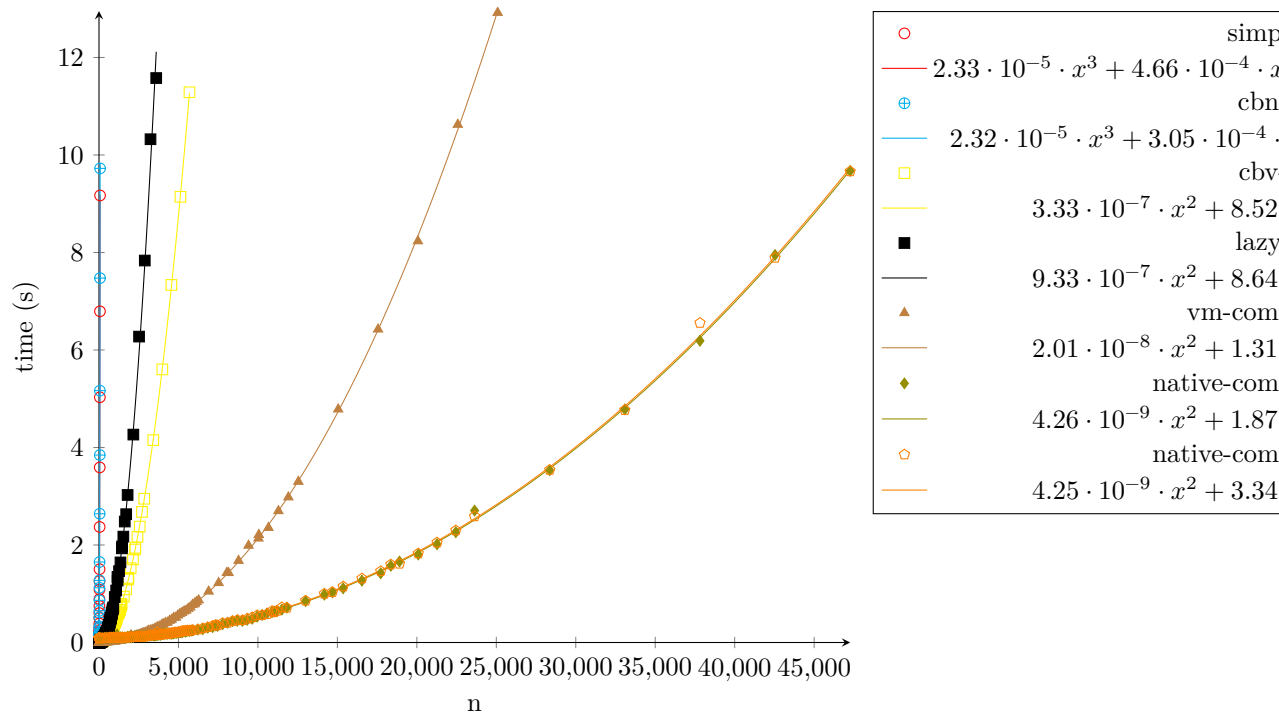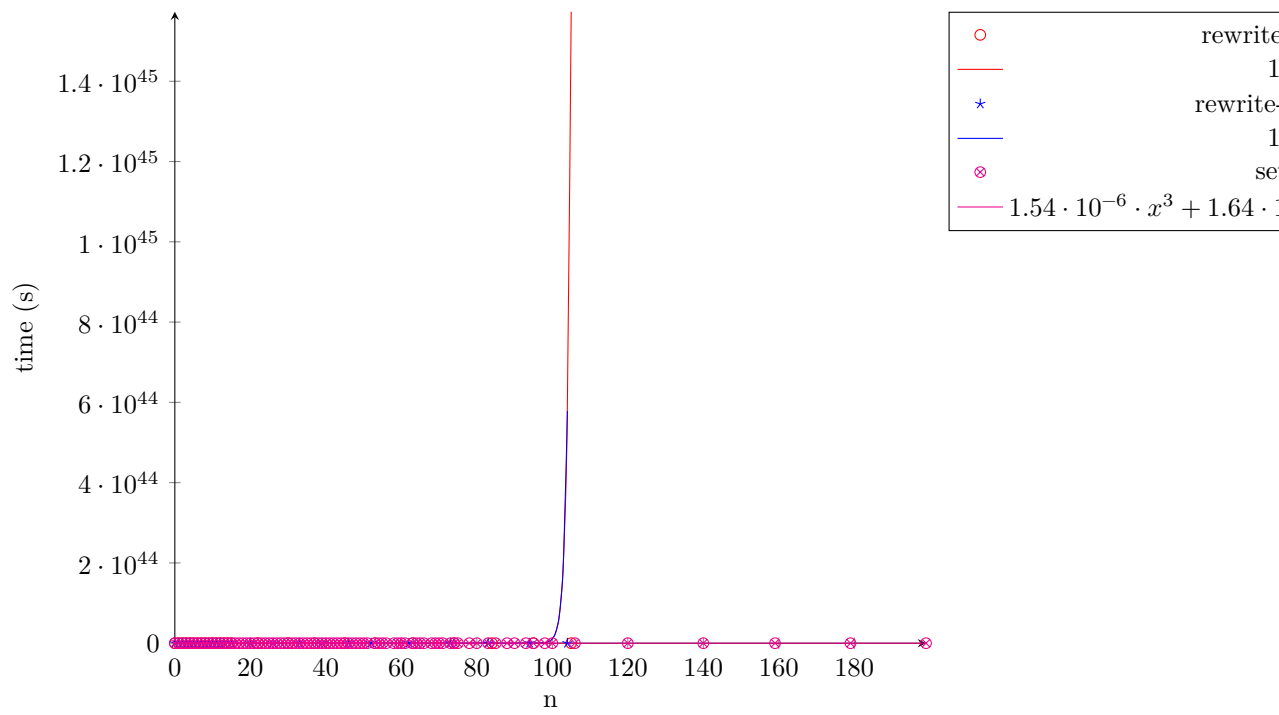20

15

10

5

0

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

n

abstract-real

$2.28 \cdot 10^{-6} \cdot x^2 + 1.84 \cdot 10^{-4} \cdot x$

fast-rewrite-real

$1.88 \cdot 10^{-6} \cdot x^2 + 1.58 \cdot 10^{-4} \cdot x$

close-abstract-real

$3.99 \cdot 10^{-7} \cdot x^2 + 2.46 \cdot 10^{-5} \cdot x$

type-admit-cast-real

$2.91 \cdot 10^{-7} \cdot x^2 - 3.92 \cdot 10^{-5} \cdot x$

check-pf-cast-real

$2.74 \cdot 10^{-7} \cdot x^2 - 7.87 \cdot 10^{-6} \cdot x$

refine-real

$2.35 \cdot 10^{-7} \cdot x^2 + 1.5 \cdot 10^{-5} \cdot x$

$5.02 \cdot 10^{-4} \cdot x - 5.23$

check-admit-real

$2.79 \cdot 10^{-7} \cdot x^2 - 2.33 \cdot 10^{-5} \cdot x$

type-admit-real

$2.74 \cdot 10^{-7} \cdot x^2 - 3.9 \cdot 10^{-6} \cdot x$

type-pf-cast-real

$2.62 \cdot 10^{-7} \cdot x^2 + 1.63 \cdot 10^{-5} \cdot x$

check-admit-cast-real

$2.65 \cdot 10^{-7} \cdot x^2 + 5.23 \cdot 10^{-6} \cdot x$

build-eval-thunk-real

$1.15 \cdot 10^{-4} \cdot x - 4.73$

build-thunk-real

$1.14 \cdot 10^{-4} \cdot x - 5.25$

check-I-real

$2.21 \cdot 10^{-5} \cdot x - 5.07$

type-I-real

$2.11 \cdot 10^{-5} \cdot x - 4.88$

build-I-real

$9.97 \cdot 10^{-6} \cdot x - 4.24$

build-admit-cast-real

$9.7 \cdot 10^{-6} \cdot x - 4.89$

build-admit-real

$9.29 \cdot 10^{-6} \cdot x - 3.99$

build-pf-cast-real

$9.42 \cdot 10^{-6} \cdot x - 4.78$
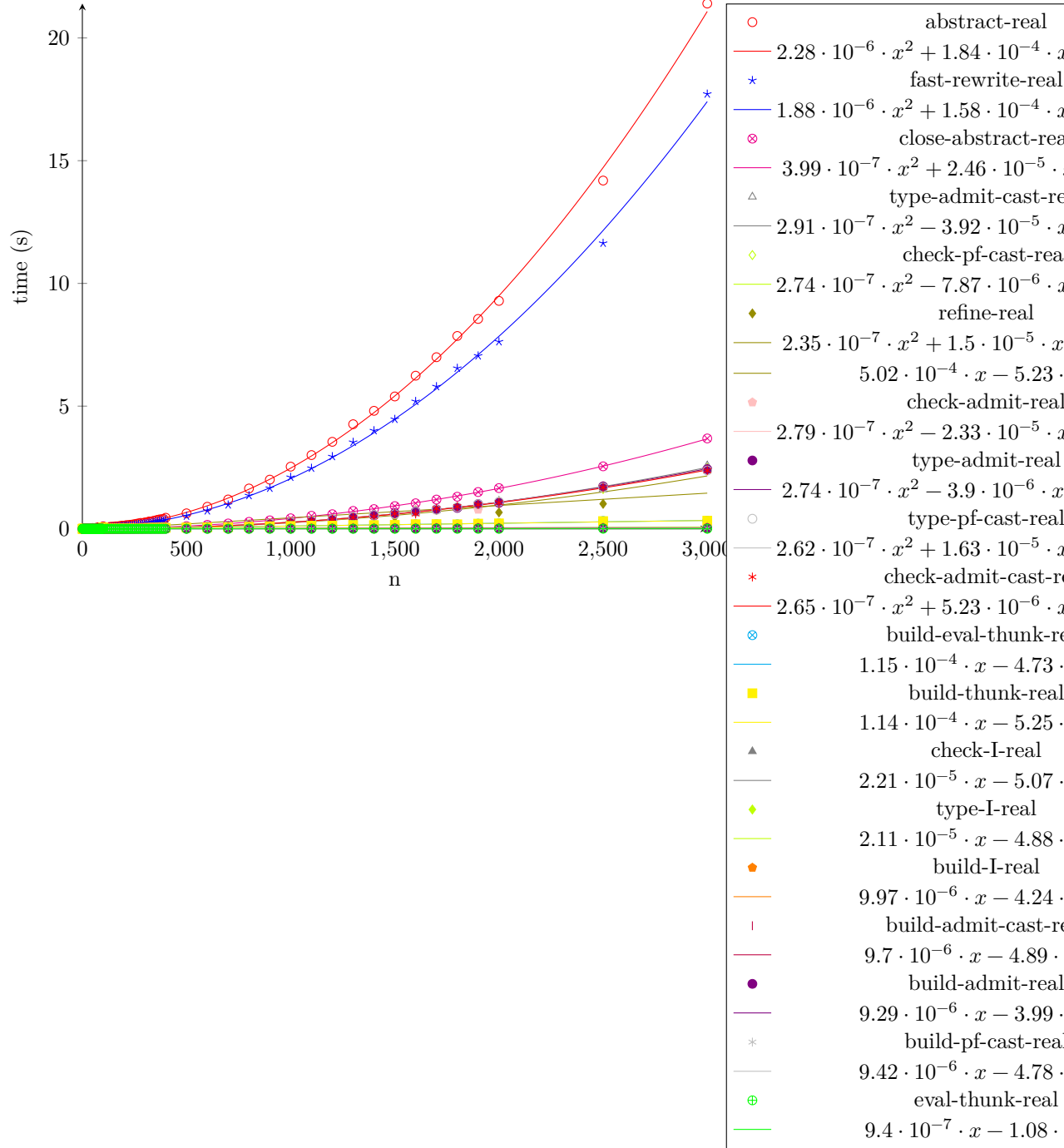
eval-thunk-real

$9.4 \cdot 10^{-7} \cdot x - 1.08$

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