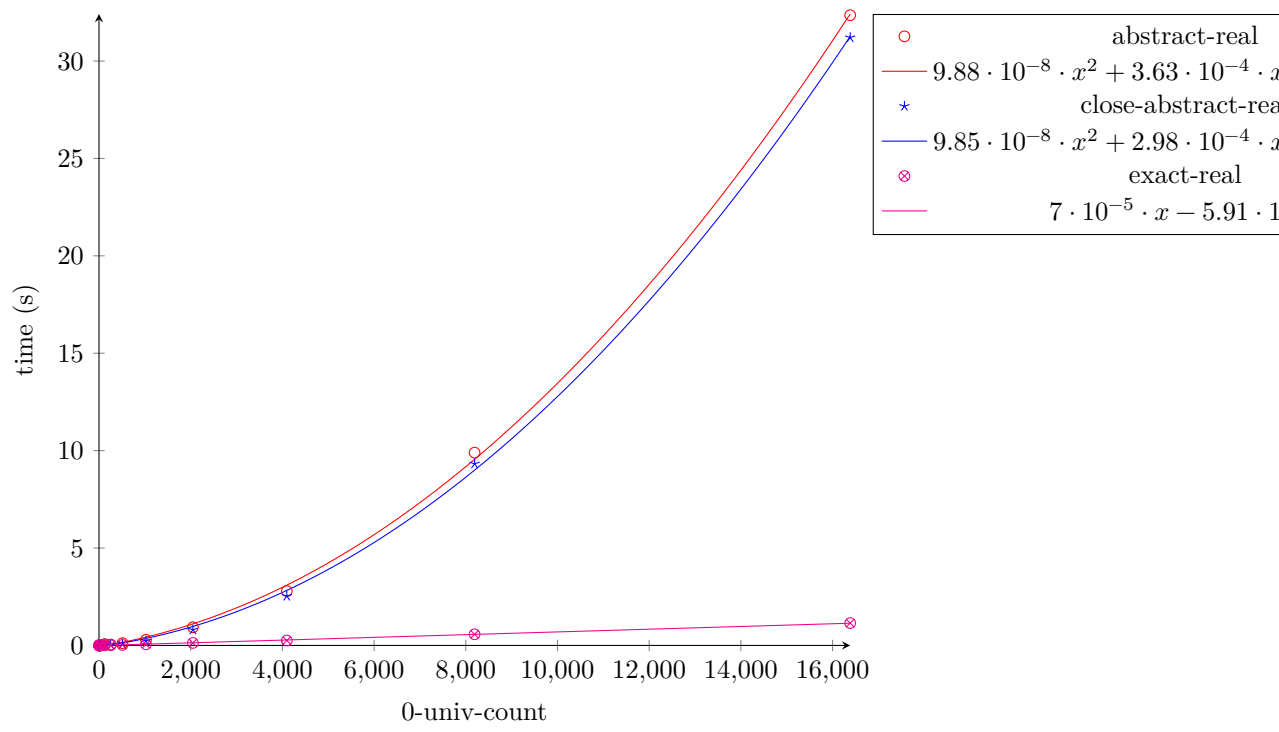Figure 1: timing-pattern

1

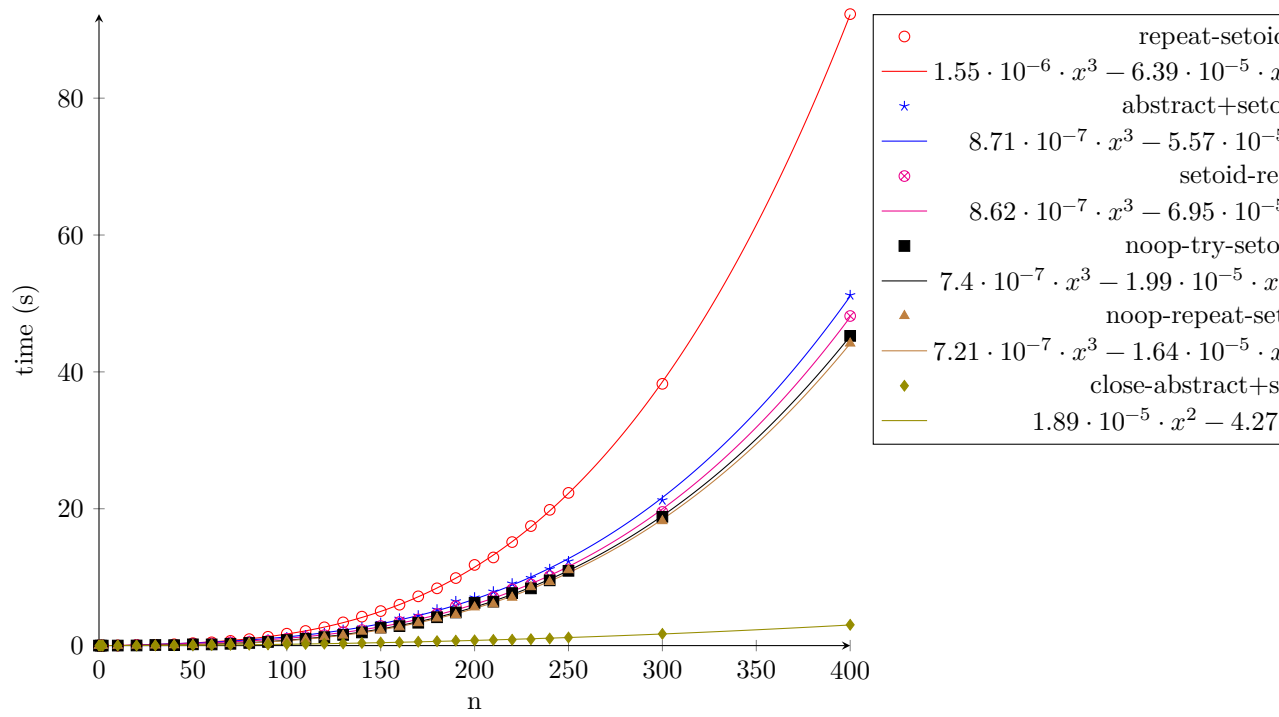Figure 2: timing-n-polymorphic-universes param-1-n 0

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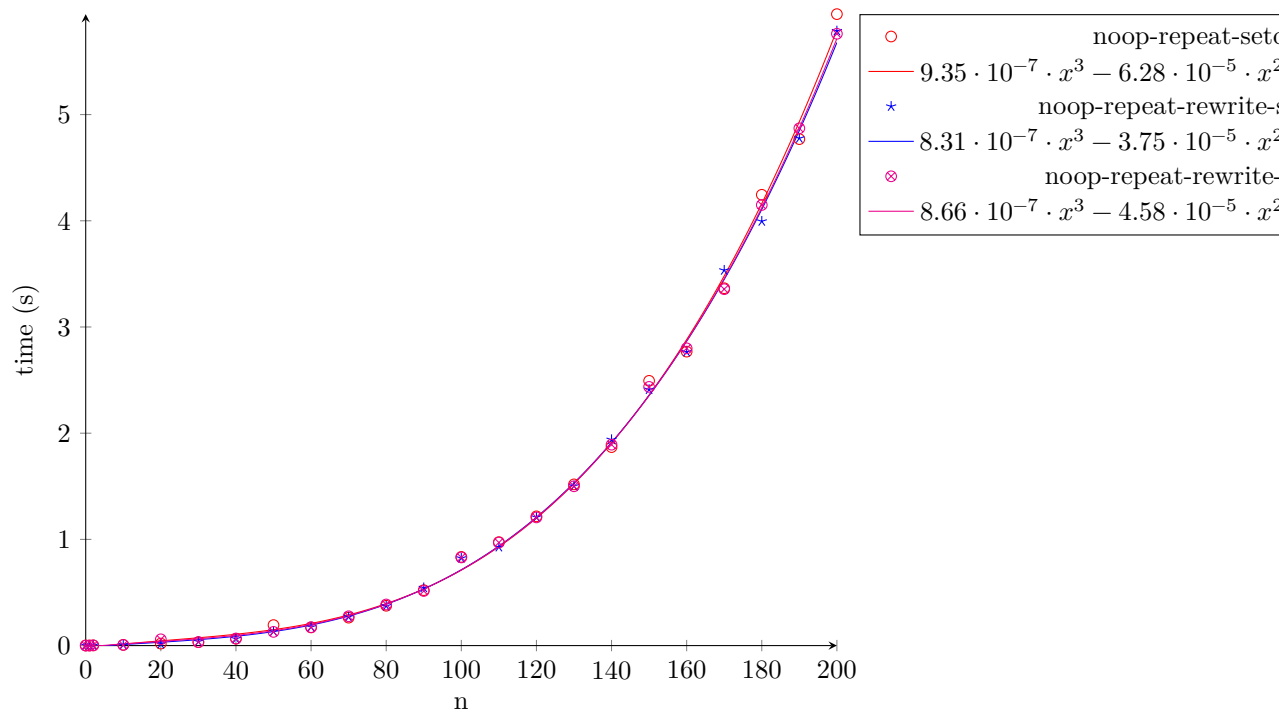
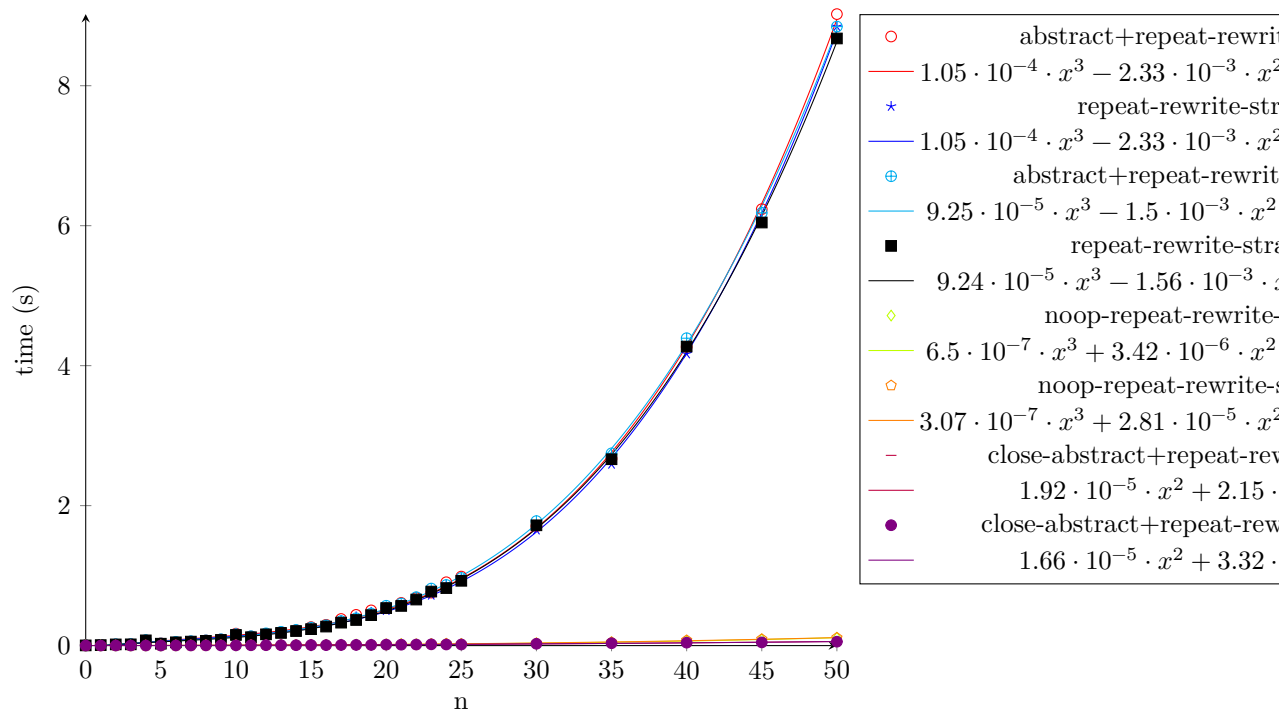Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

4

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

abstract+repeat-rewri
$1.05 \cdot 10^{-4} \cdot x^3 - 2.33 \cdot 10^{-3} \cdot x^2$
repeat-rewrite-str
$1.05 \cdot 10^{-4} \cdot x^3 - 2.33 \cdot 10^{-3} \cdot x^2$
abstract+repeat-rewrit
$9.25 \cdot 10^{-5} \cdot x^3 - 1.5 \cdot 10^{-3} \cdot x^2$
repeat-rewrite-stra
$9.24 \cdot 10^{-5} \cdot x^3 - 1.56 \cdot 10^{-3} \cdot x$
noop-repeat-rewrite-
$6.5 \cdot 10^{-7} \cdot x^3 + 3.42 \cdot 10^{-6} \cdot x^2$
noop-repeat-rewrite-s
$3.07 \cdot 10^{-7} \cdot x^3 + 2.81 \cdot 10^{-5} \cdot x^2$
close-abstract+repeat-rew
$1.92 \cdot 10^{-5} \cdot x^2 + 2.15 \cdot$
close-abstract+repeat-rew
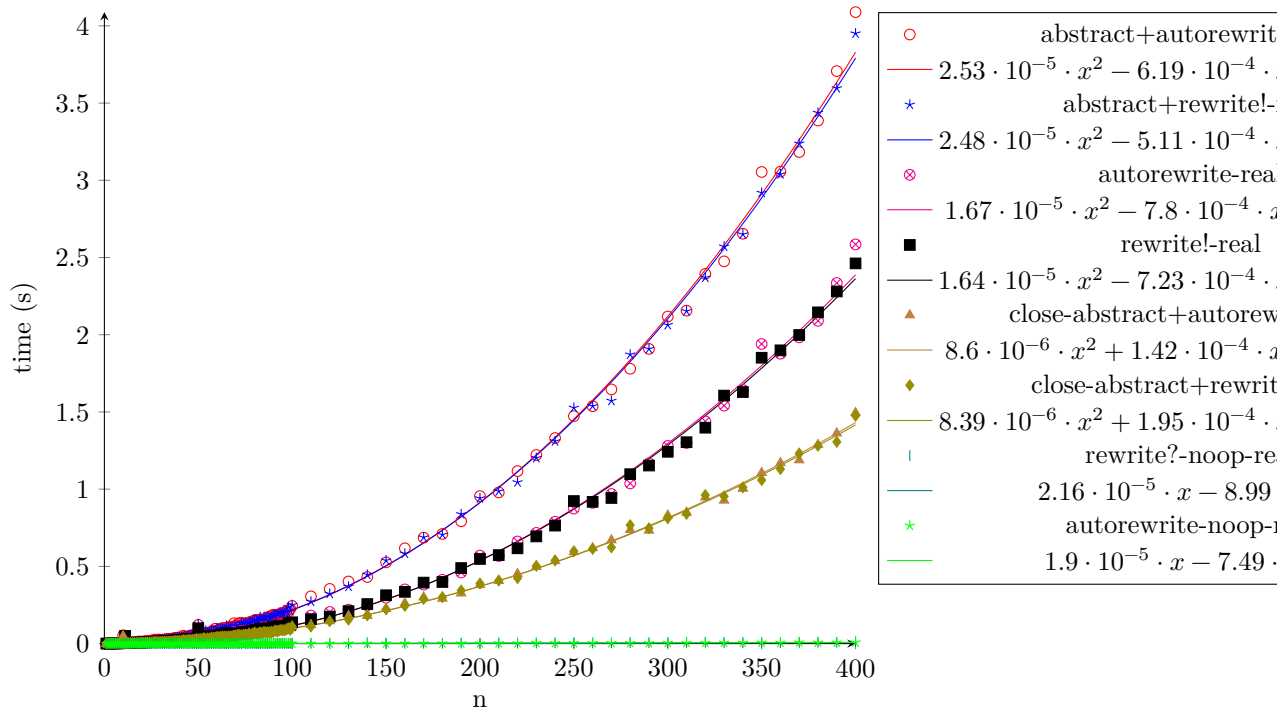$1.66 \cdot 10^{-5} \cdot x^2 + 3.32 \cdot$

time (s)

n

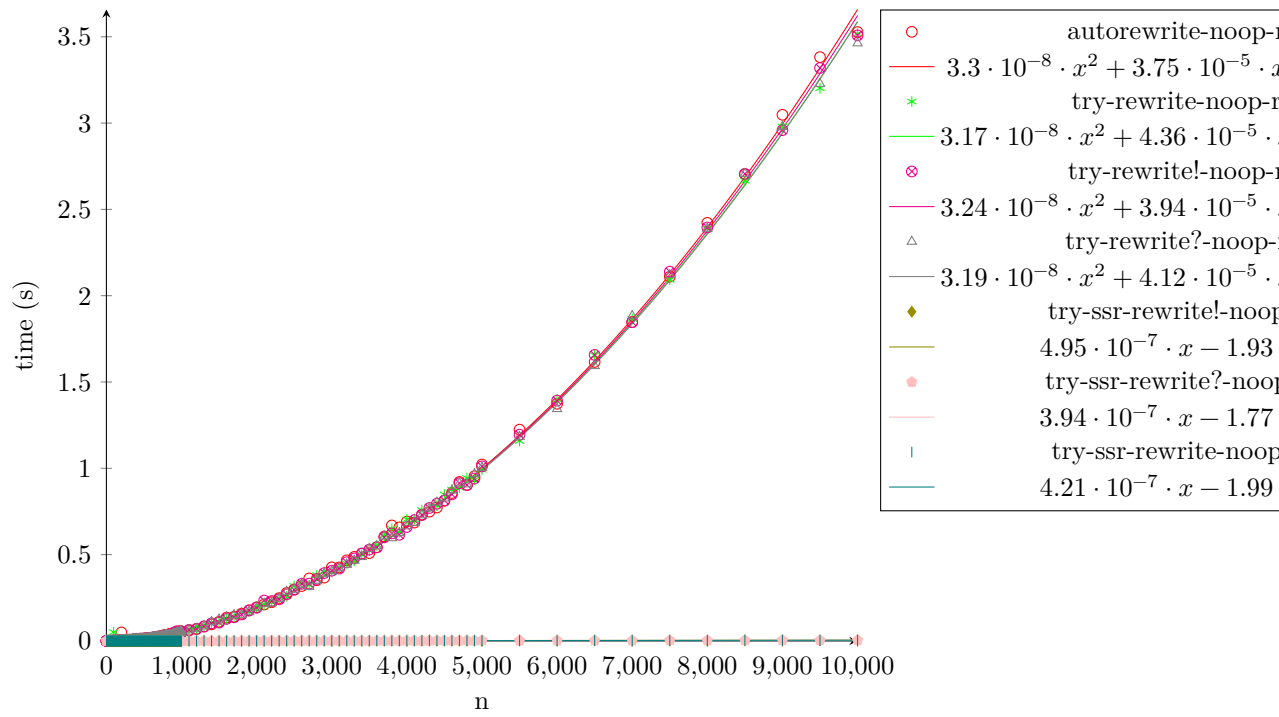Figure 6: timing-rewrite-repeated-app-autorewrite

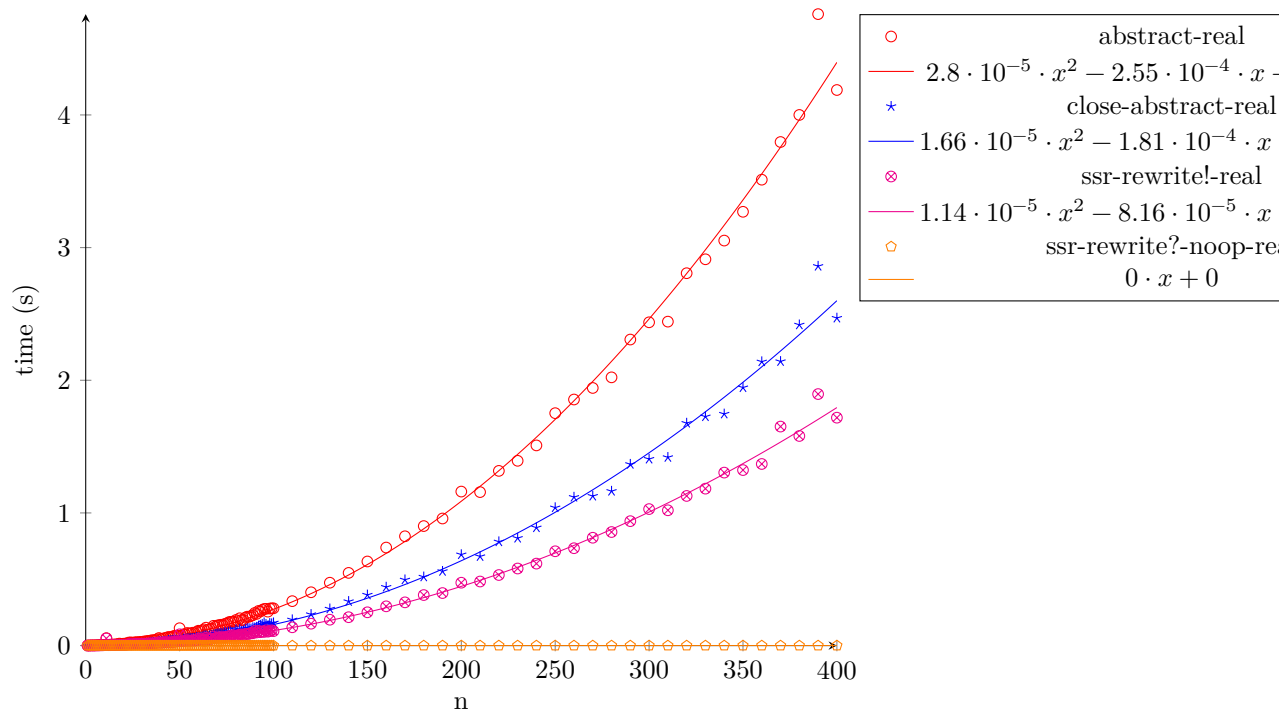Figure 7: timing-rewrite-repeated-app-autorewrite-noop
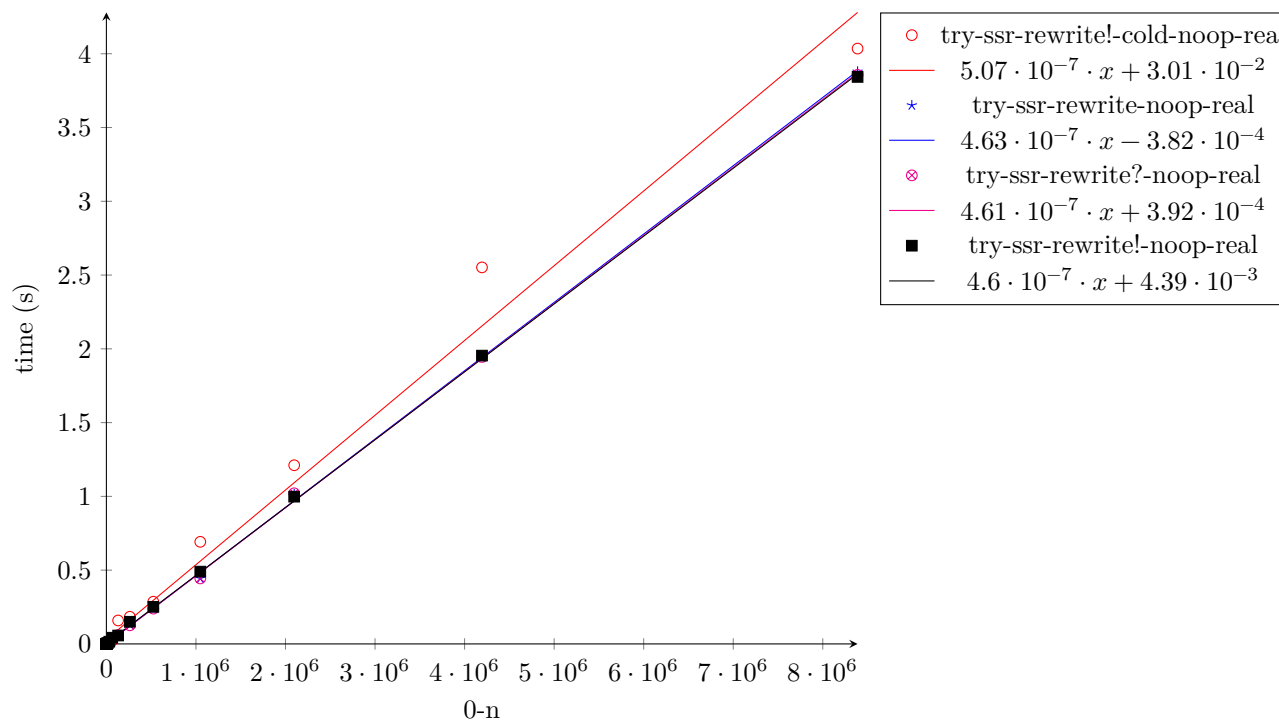
Figure 8: timing-rewrite-repeated-app-ssrrewrite

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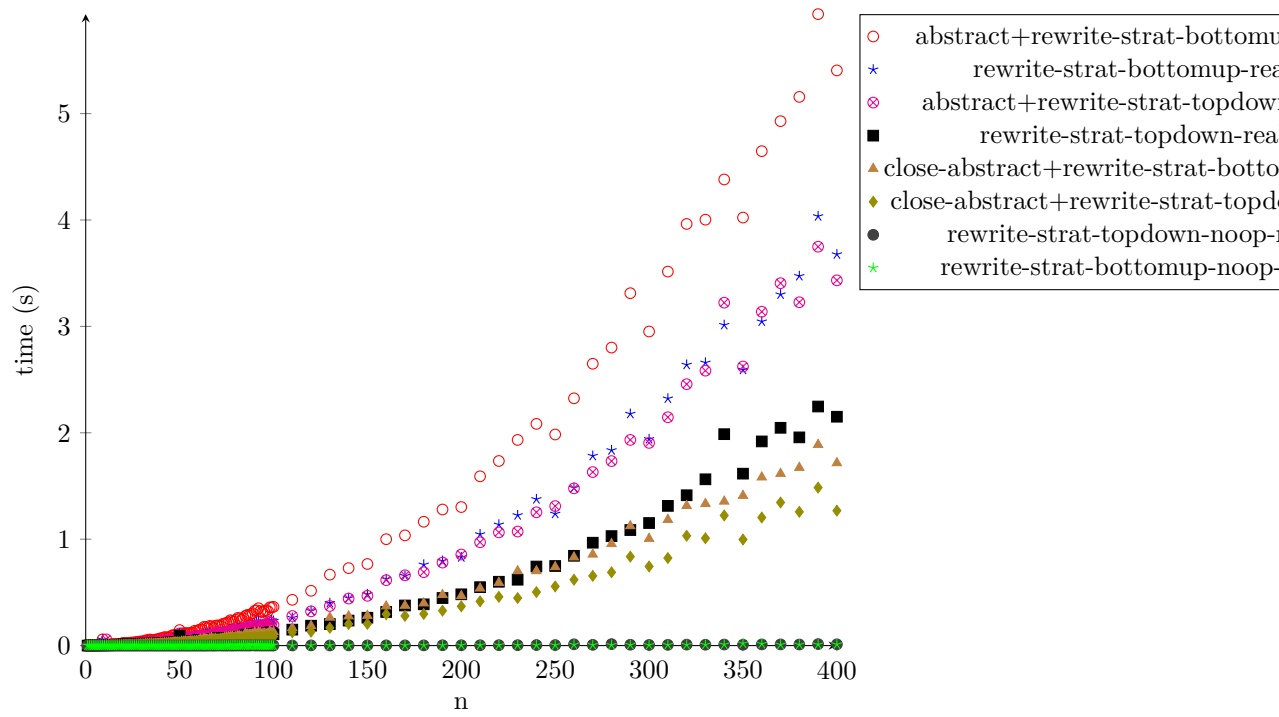
Figure 10: timing-rewrite-repeated-app-rewrite-strat

The legend for the figure contains:
- 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...
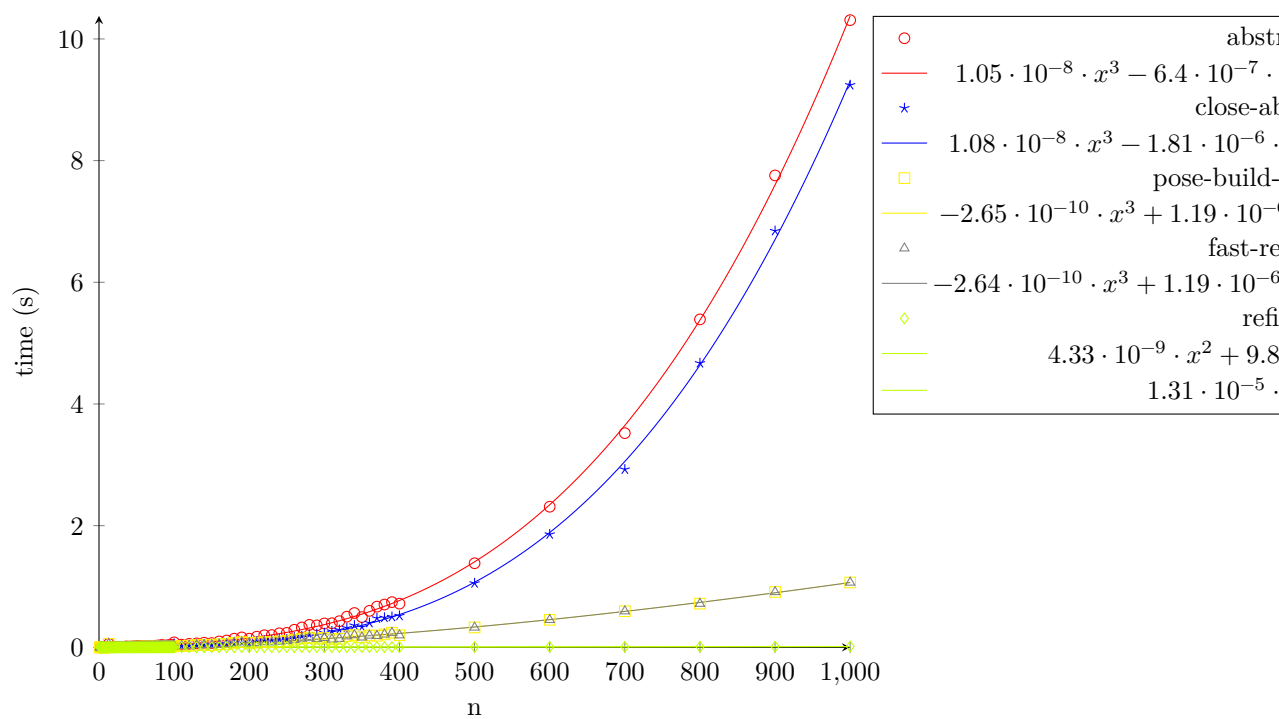- rewrite-strat-topdown-noop-...
- rewrite-strat-bottomup-noop-...

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

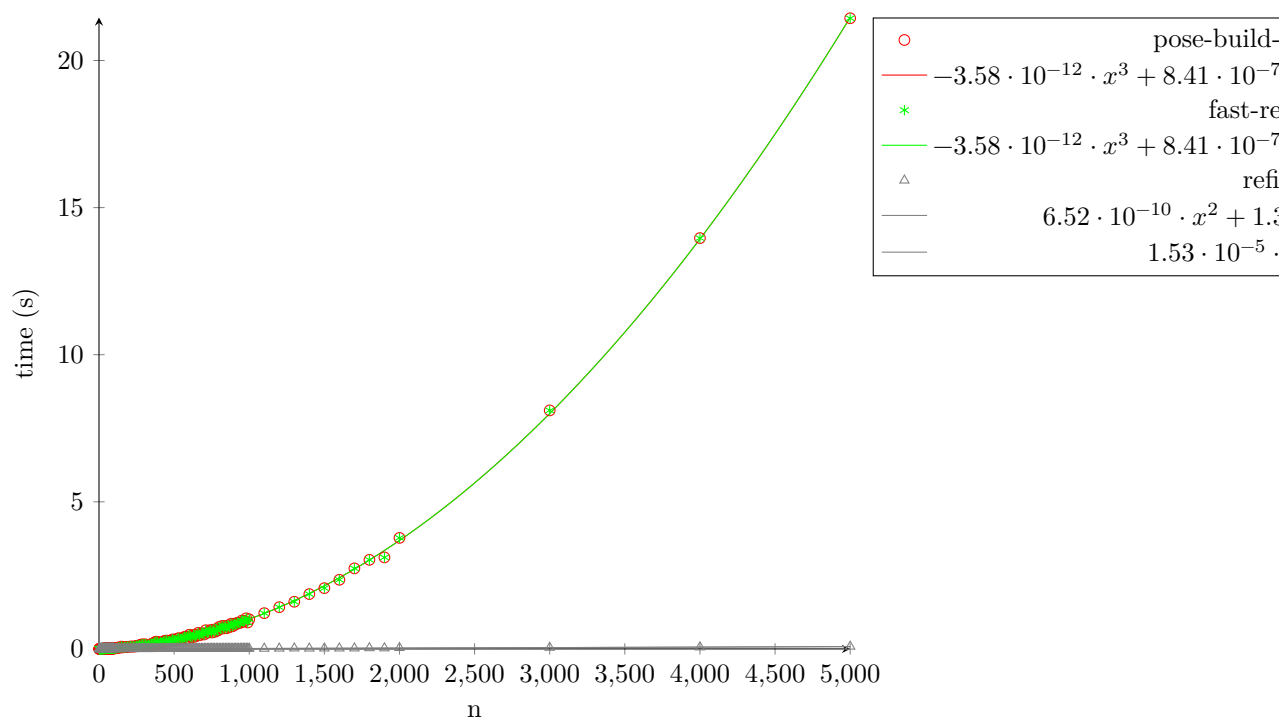Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

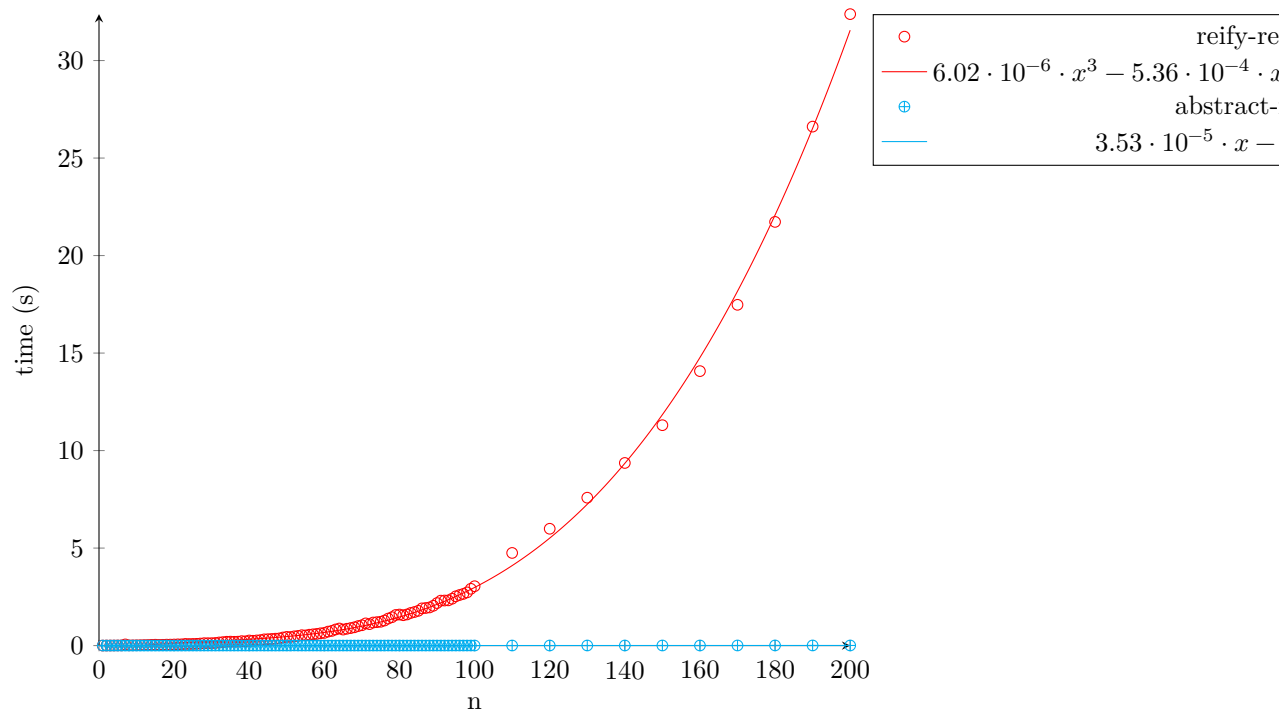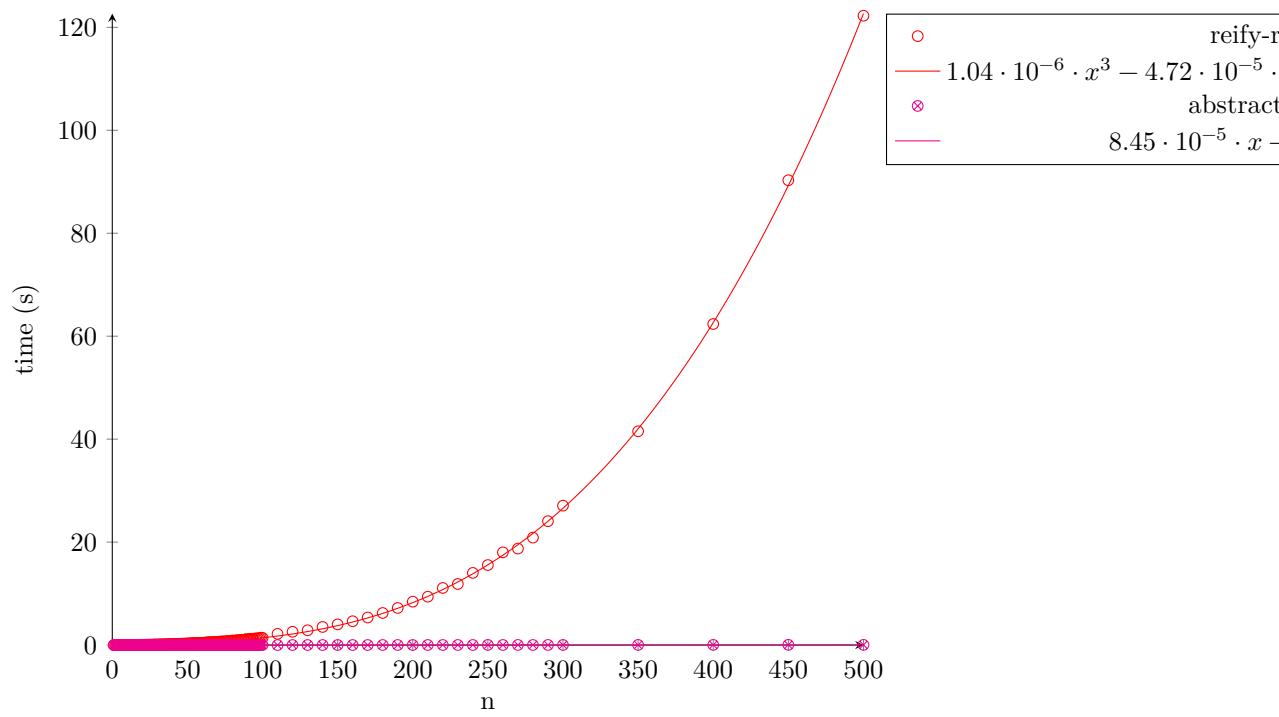Figure 13: timing-typeclass-reification-let-in-HOAS

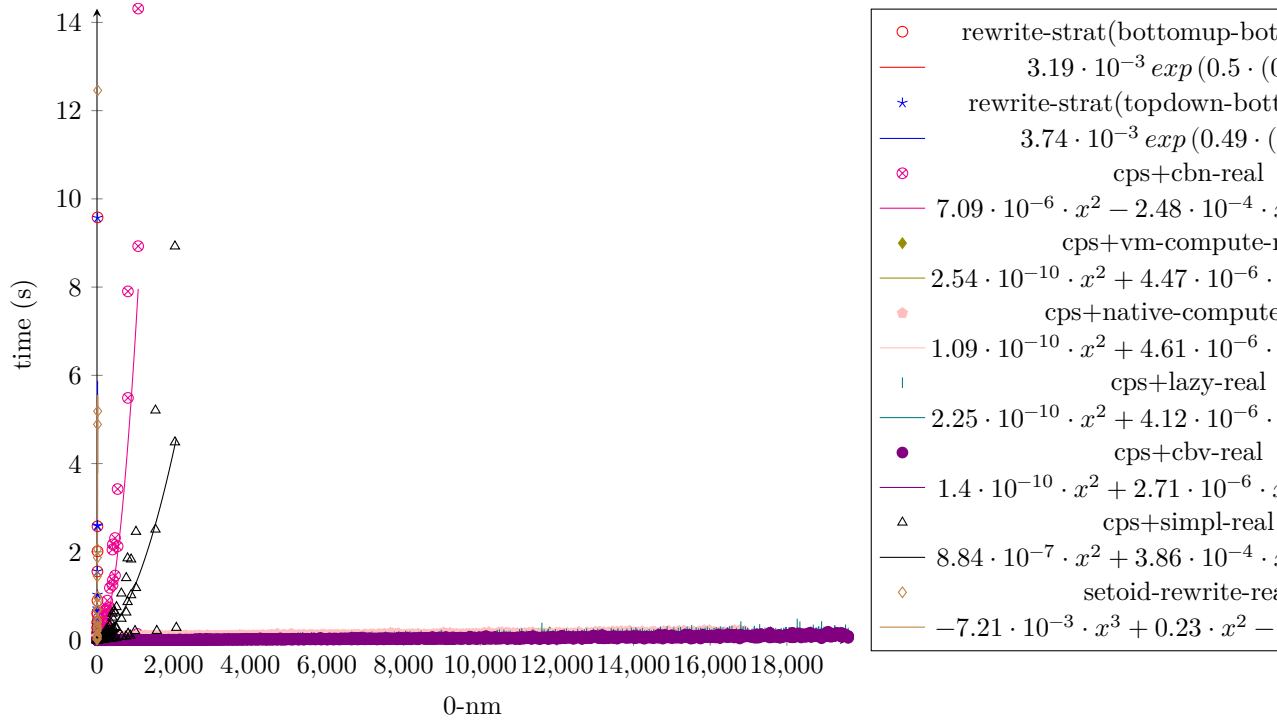Figure 14: timing-typeclass-reification-let-in-PHOAS

Figure 15: timing-rewrite-lift-lets-map param-1-n 1, param-2-m 1
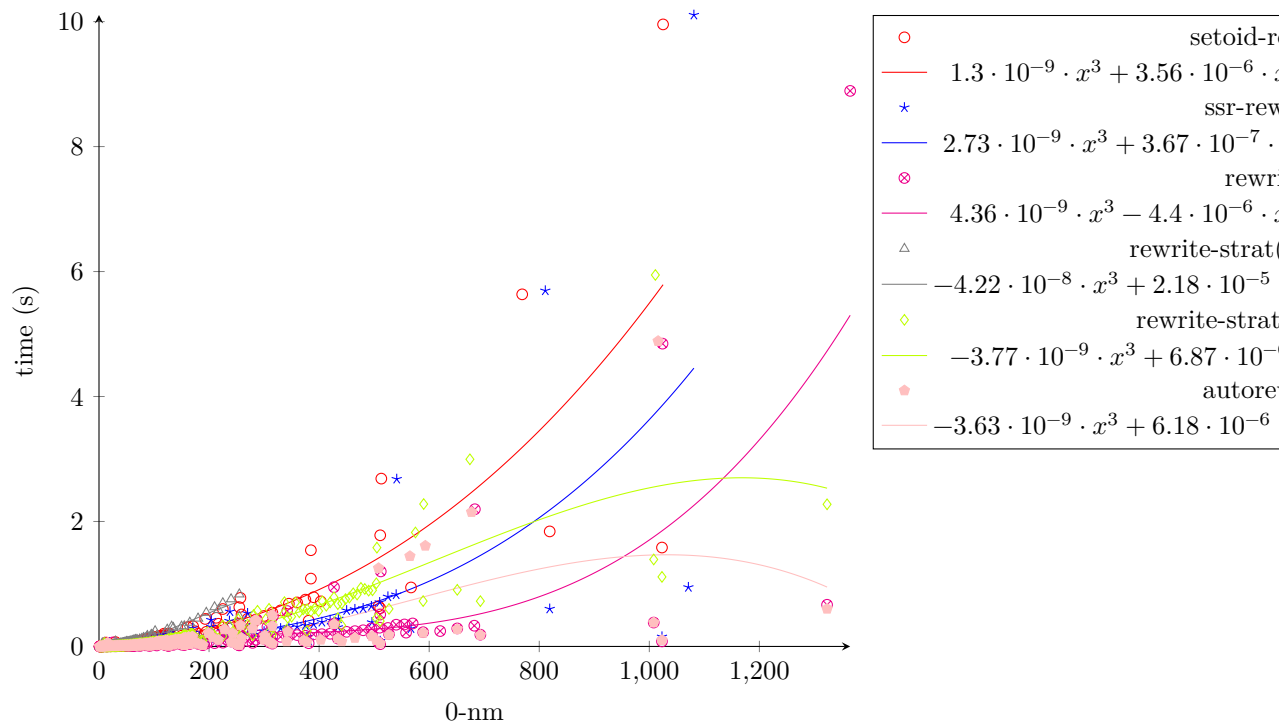
Figure 16: timing-rewrite-plus-0-tree param-1-n ⟶ 0, param-2-m ⟶ 1, param-3-input-size ⟶ 5, param-4-output-size ⟶ 3, param-5-num-rewrites ⟶ 1
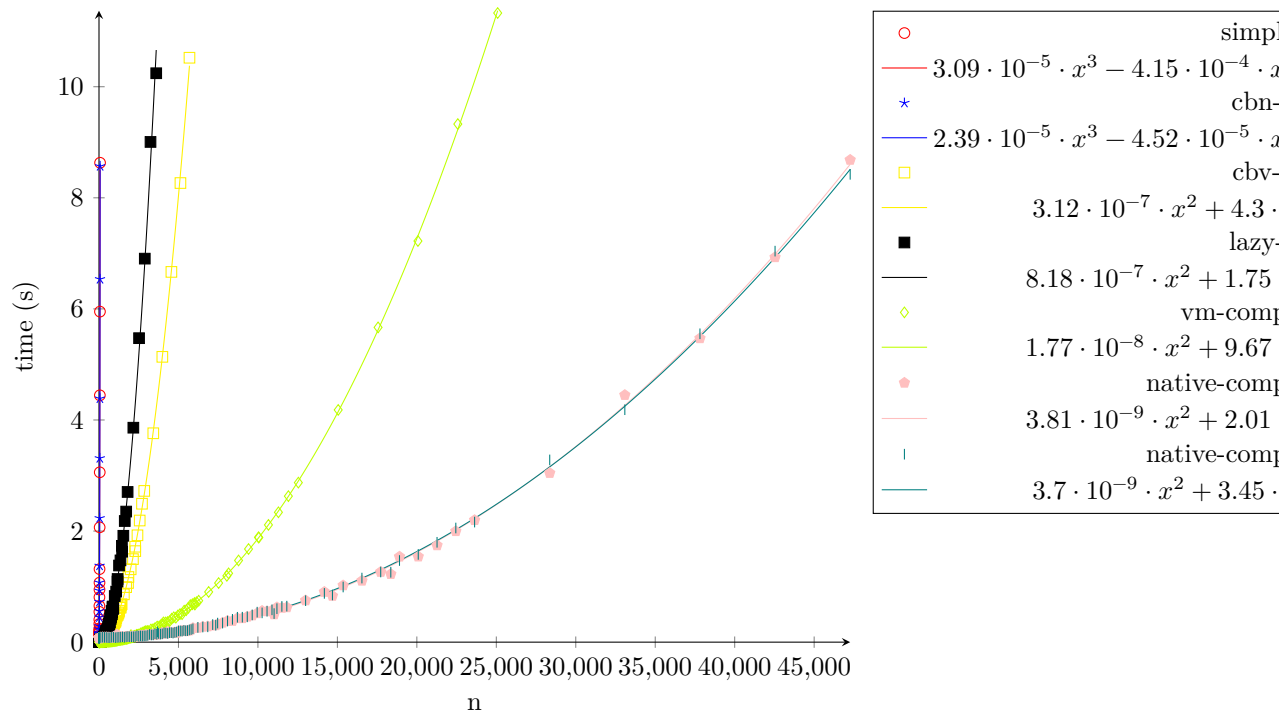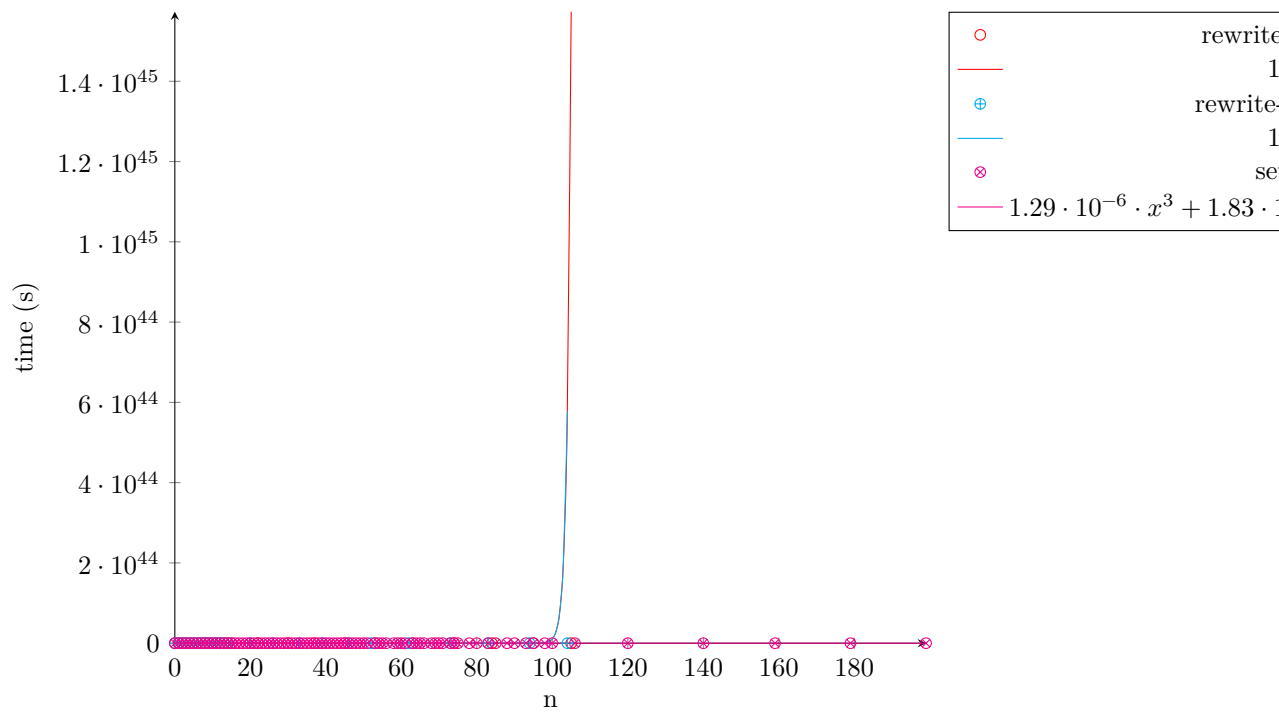
Figure 17: timing-sieve-of-eratosthenes

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

The figure shows a plot with axis labels "time (s)" (vertical) and "n" (horizontal), ranging from 0 to 3,000 on the x-axis and 0 to 20 on the y-axis. The legend includes:

- abstract-real
- $2.17 \cdot 10^{-6} \cdot x^2 + 7 \cdot 10^{-5} \cdot x$
- fast-rewrite-real
- $1.81 \cdot 10^{-6} \cdot x^2 + 7.04 \cdot 10^{-5} \cdot x$
- close-abstract-real
- $3.6 \cdot 10^{-7} \cdot x^2 - 1.99 \cdot 10^{-6} \cdot x$
- type-admit-cast-real
- $2.79 \cdot 10^{-7} \cdot x^2 - 4.01 \cdot 10^{-5} \cdot x$
- check-pf-cast-real
- $2.63 \cdot 10^{-7} \cdot x^2 - 1.12 \cdot 10^{-5} \cdot x$
- type-pf-cast-real
- $2.7 \cdot 10^{-7} \cdot x^2 - 1.62 \cdot 10^{-5} \cdot x$
- check-admit-cast-real
- $2.7 \cdot 10^{-7} \cdot x^2 - 3.14 \cdot 10^{-5} \cdot x$
- refine-real
- $2.26 \cdot 10^{-7} \cdot x^2 + 3.07 \cdot 10^{-6} \cdot x$
- $4.72 \cdot 10^{-4} \cdot x - 4.95$
- type-admit-real
- $2.54 \cdot 10^{-7} \cdot x^2 - 7.96 \cdot 10^{-6} \cdot x$
- check-admit-real
- $2.47 \cdot 10^{-7} \cdot x^2 + 9.97 \cdot 10^{-7} \cdot x$
- build-eval-thunk-real
- $1.03 \cdot 10^{-4} \cdot x - 7.77$
- build-thunk-real
- $1.01 \cdot 10^{-4} \cdot x - 7.94$
- check-I-real
- $2.02 \cdot 10^{-5} \cdot x - 5.55$
- type-I-real
- $1.93 \cdot 10^{-5} \cdot x - 5.6$
- build-I-real
- $8.84 \cdot 10^{-6} \cdot x - 4.51$
- build-pf-cast-real
- $8.65 \cdot 10^{-6} \cdot x - 5.11$
- build-admit-cast-real
- $8.17 \cdot 10^{-6} \cdot x - 4.66$
- build-admit-real
- $8.14 \cdot 10^{-6} \cdot x - 4.46$
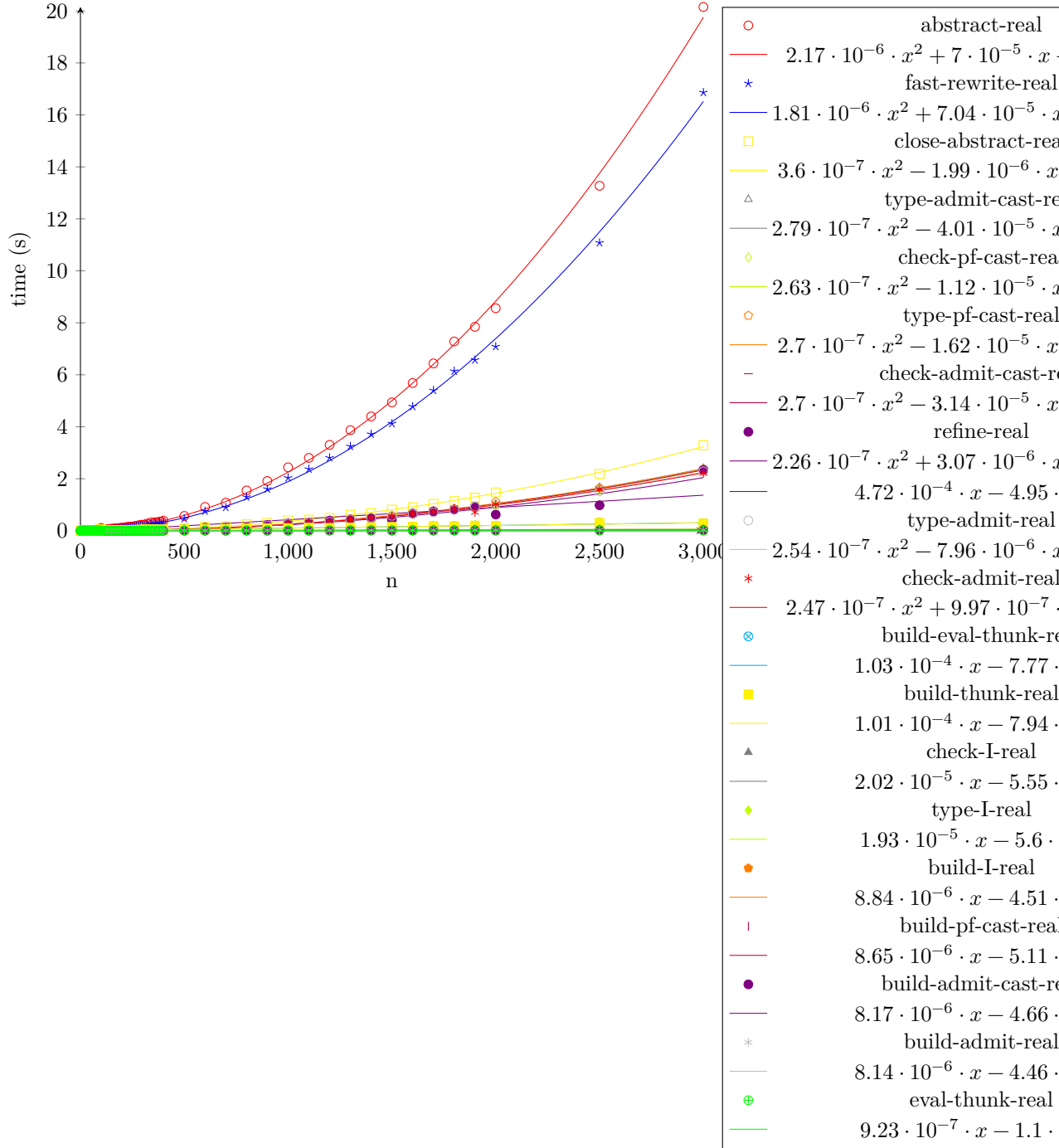- eval-thunk-real
- $9.23 \cdot 10^{-7} \cdot x - 1.1$

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