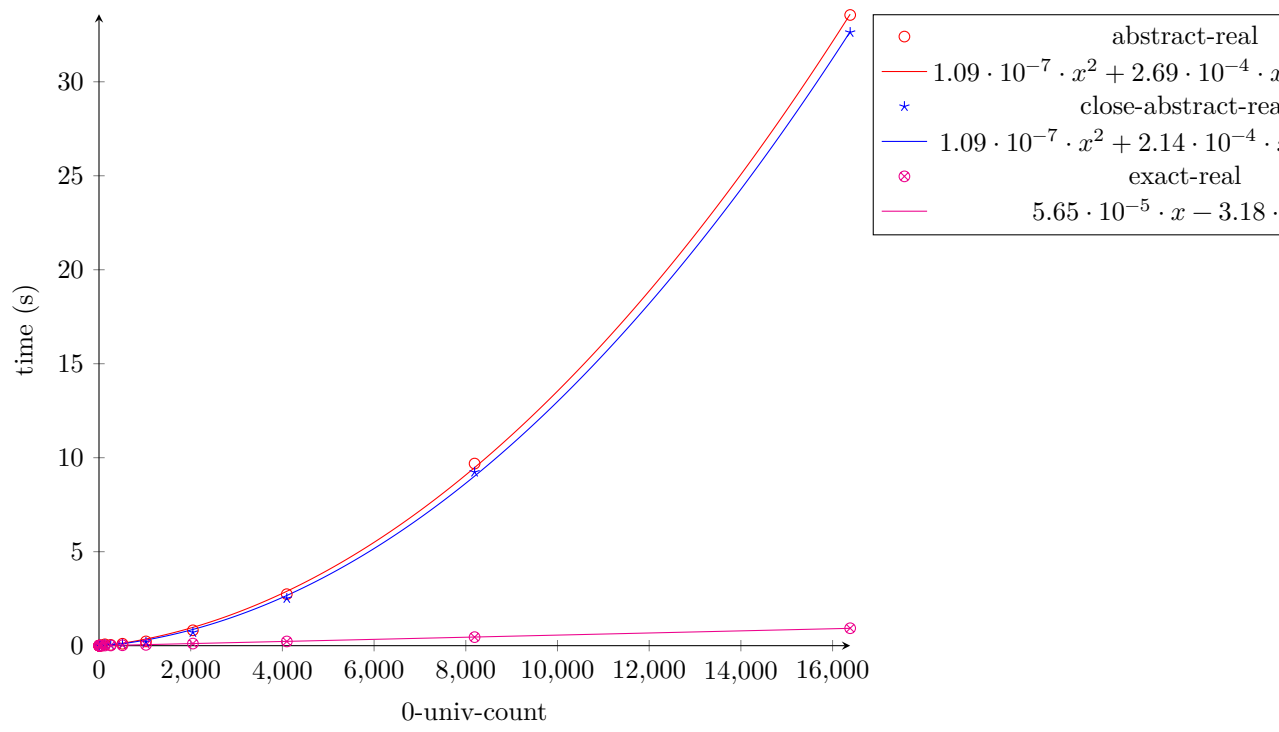Figure 1: timing-pattern

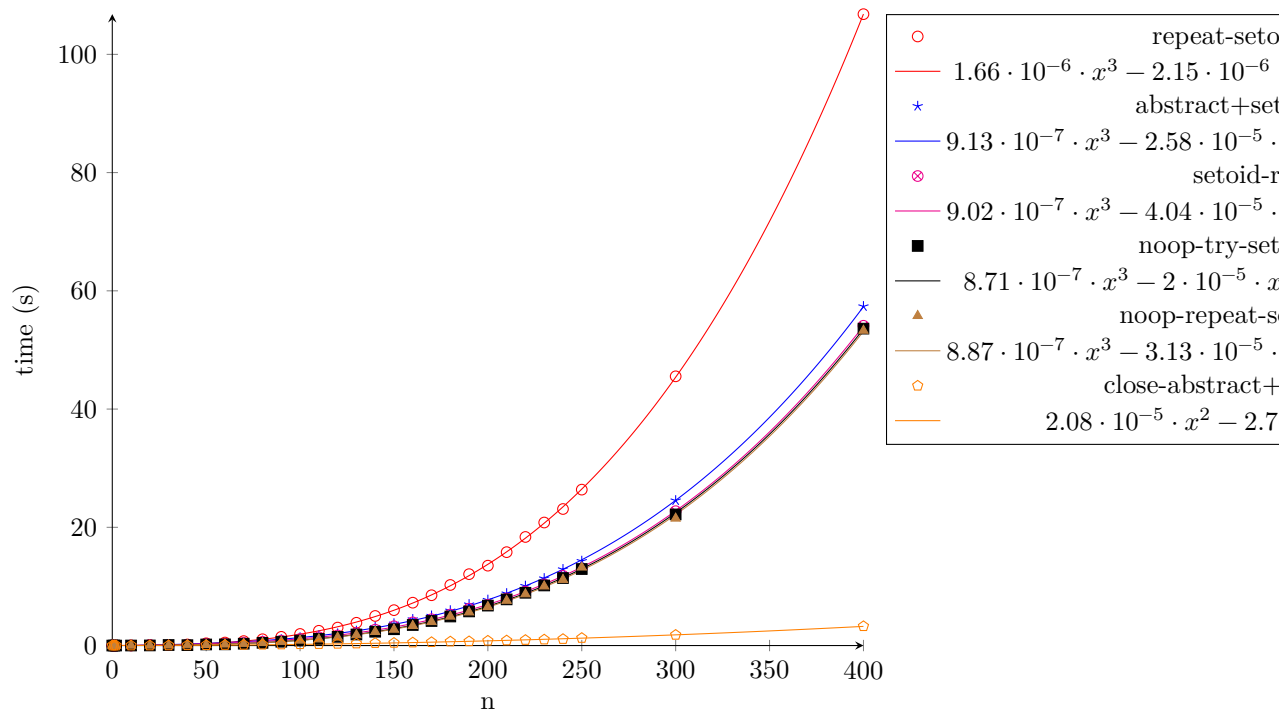Figure 2: timing-n-polymorphic-universes param-1-n 0

Figure 3: timing-repeat-setoid-rewrite-under-binders
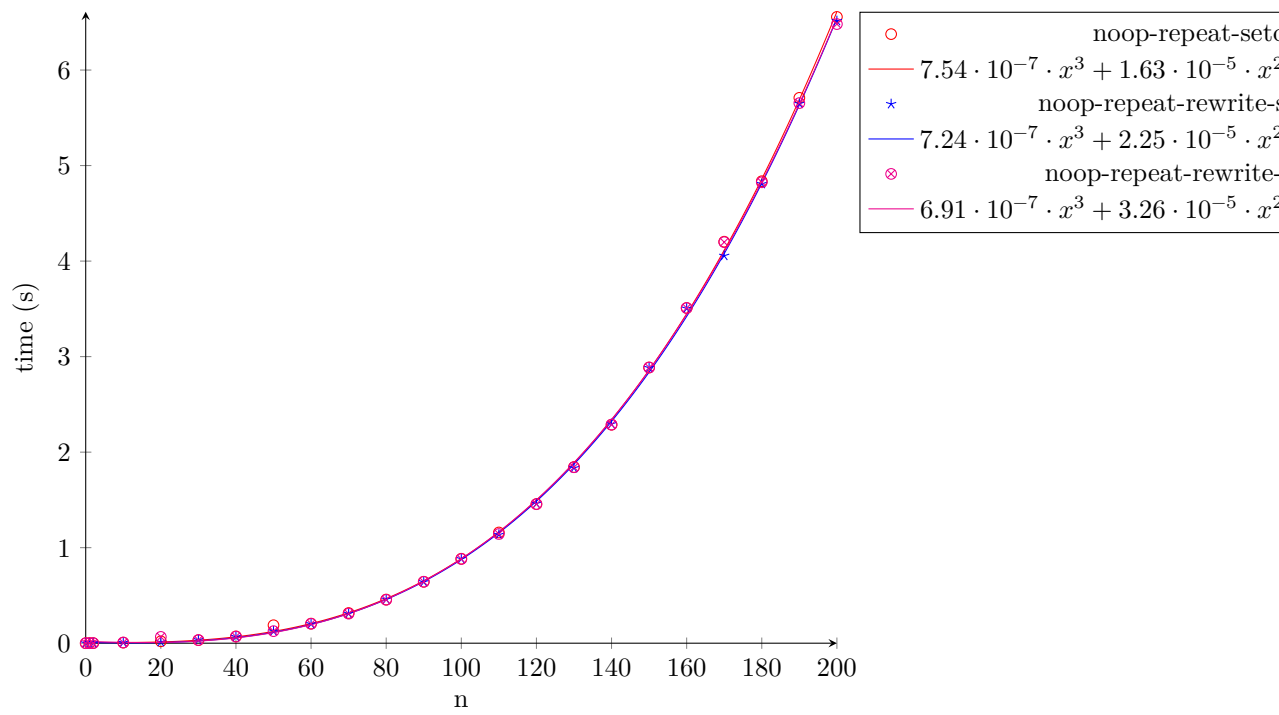
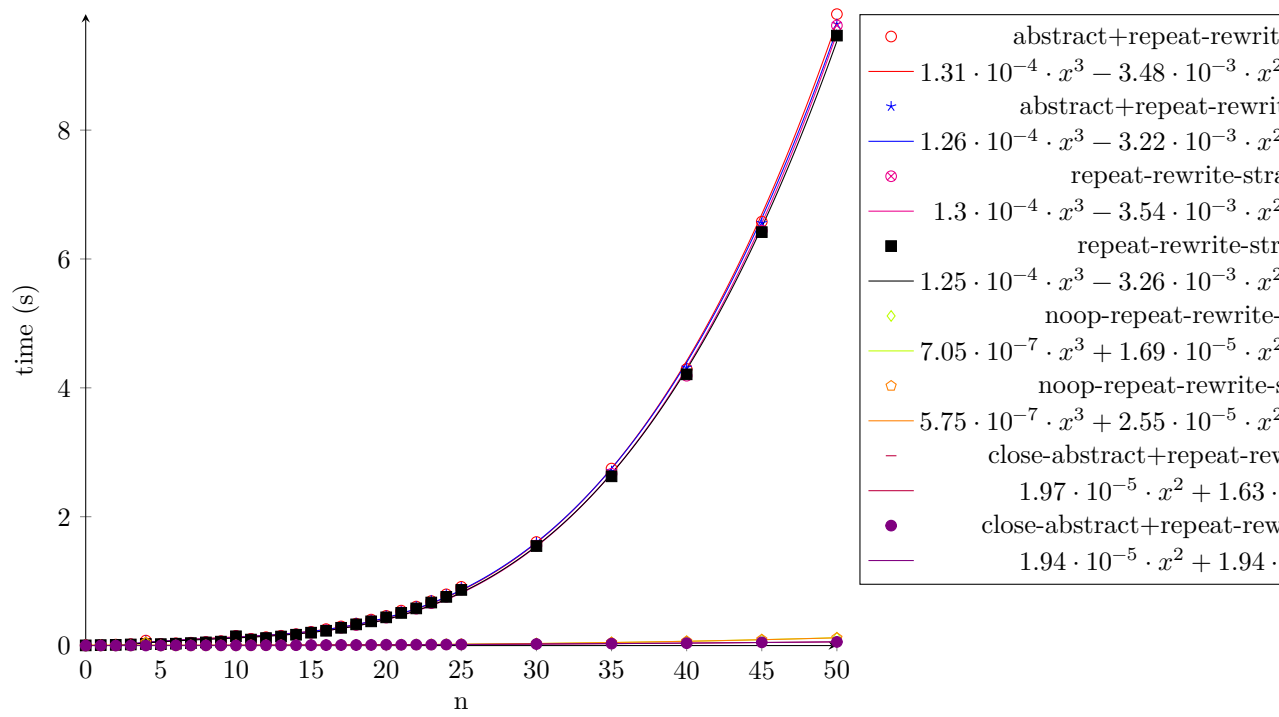Figure 4: timing-repeat-setoid-rewrite-under-binders-noop
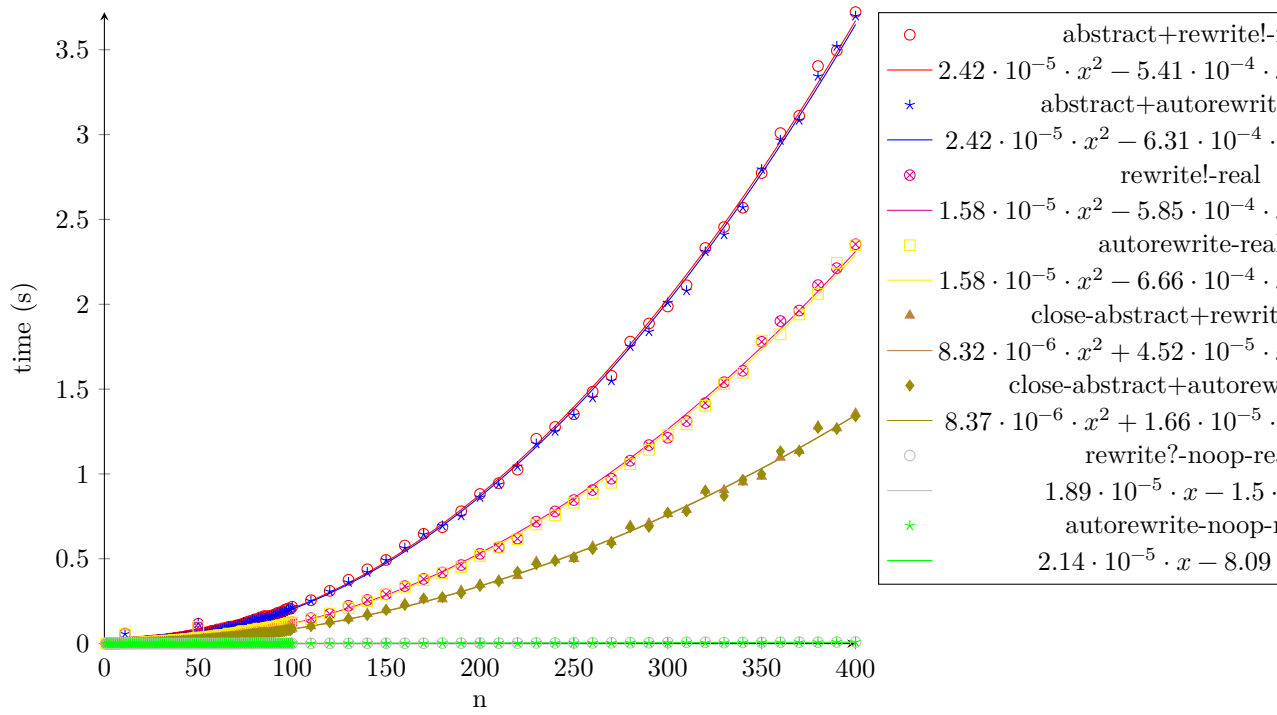
Figure 5: timing-rewrite-strat-under-binders

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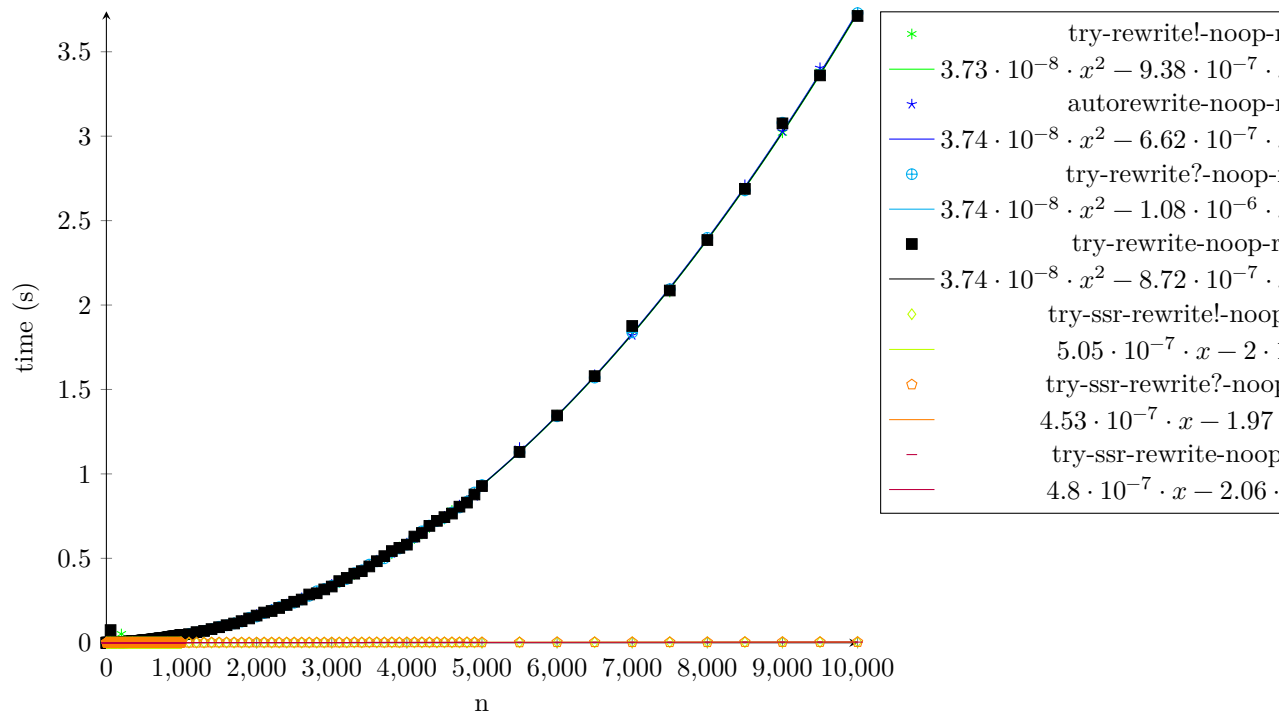Figure 6: timing-rewrite-repeated-app-autorewrite

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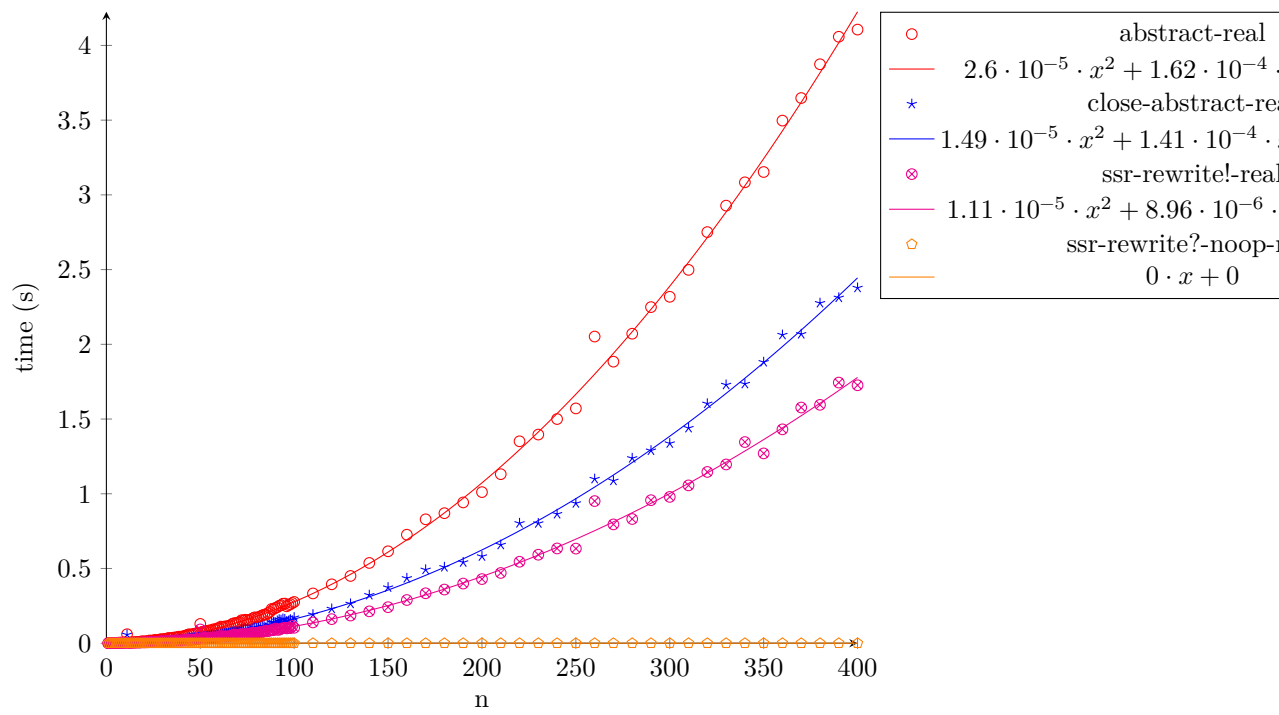
Figure 8: timing-rewrite-repeated-app-ssrrewrite

8
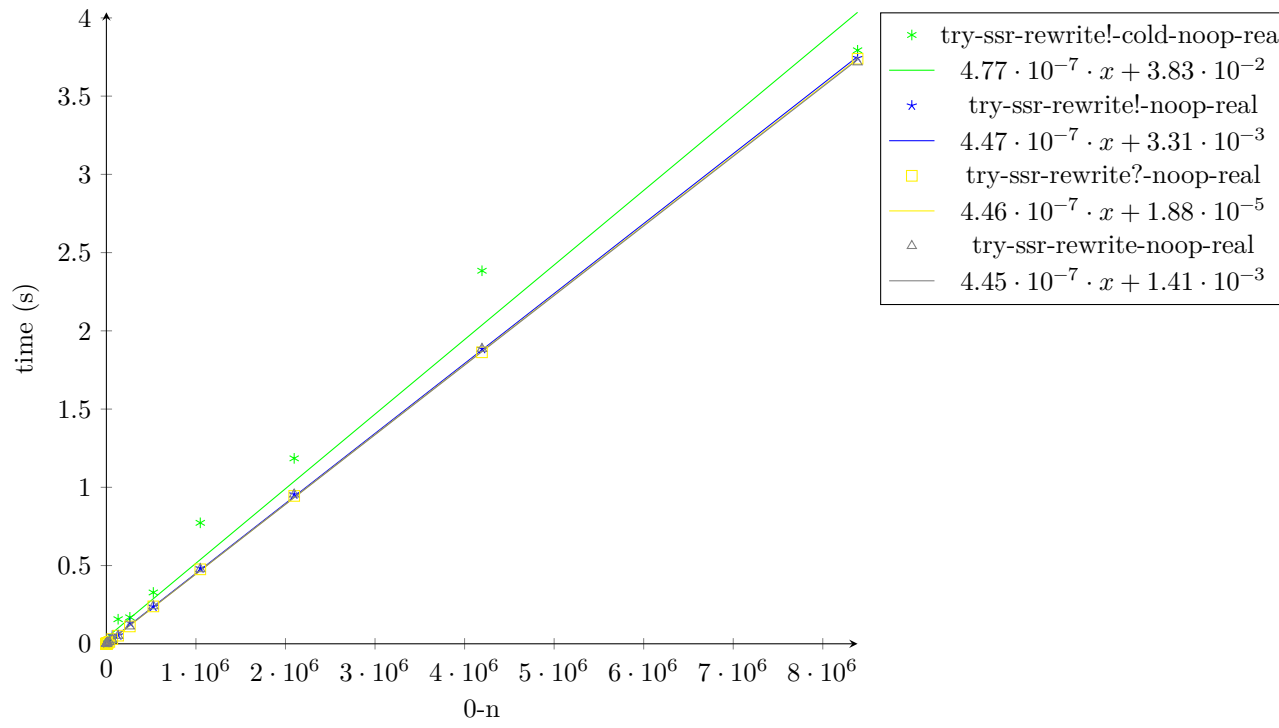
Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1
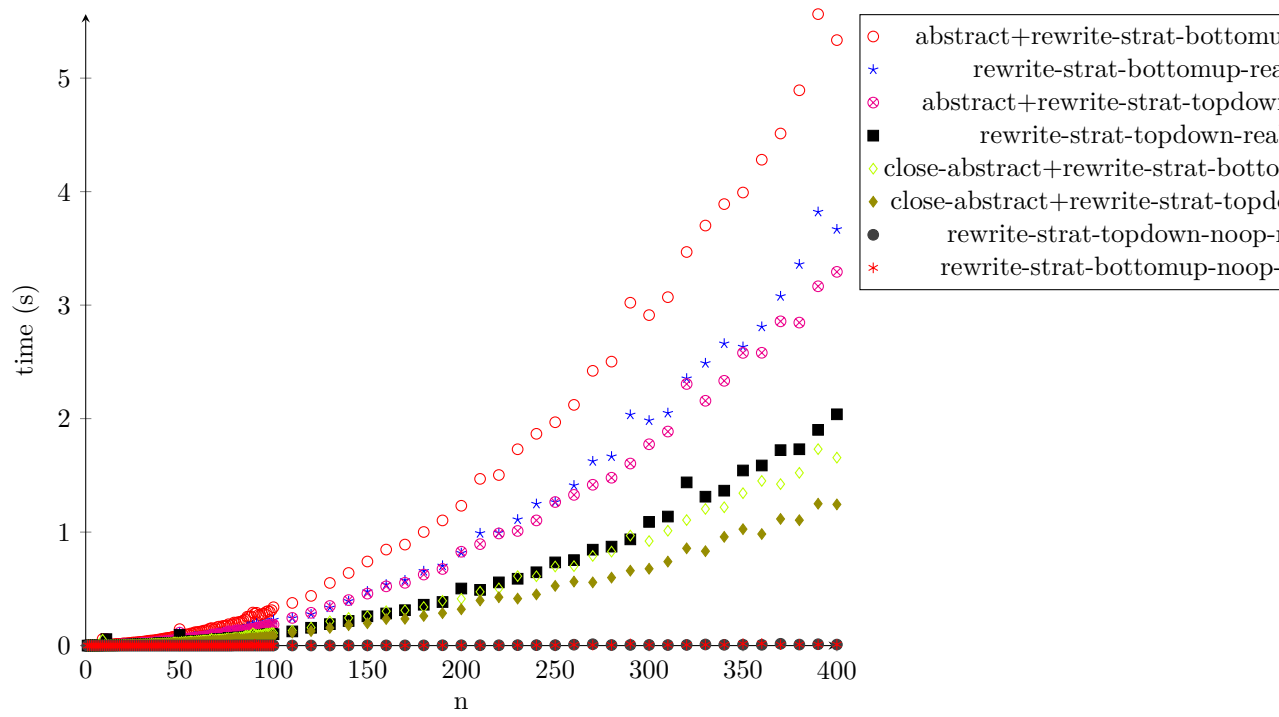
Figure 10: timing-rewrite-repeated-app-rewrite-strat
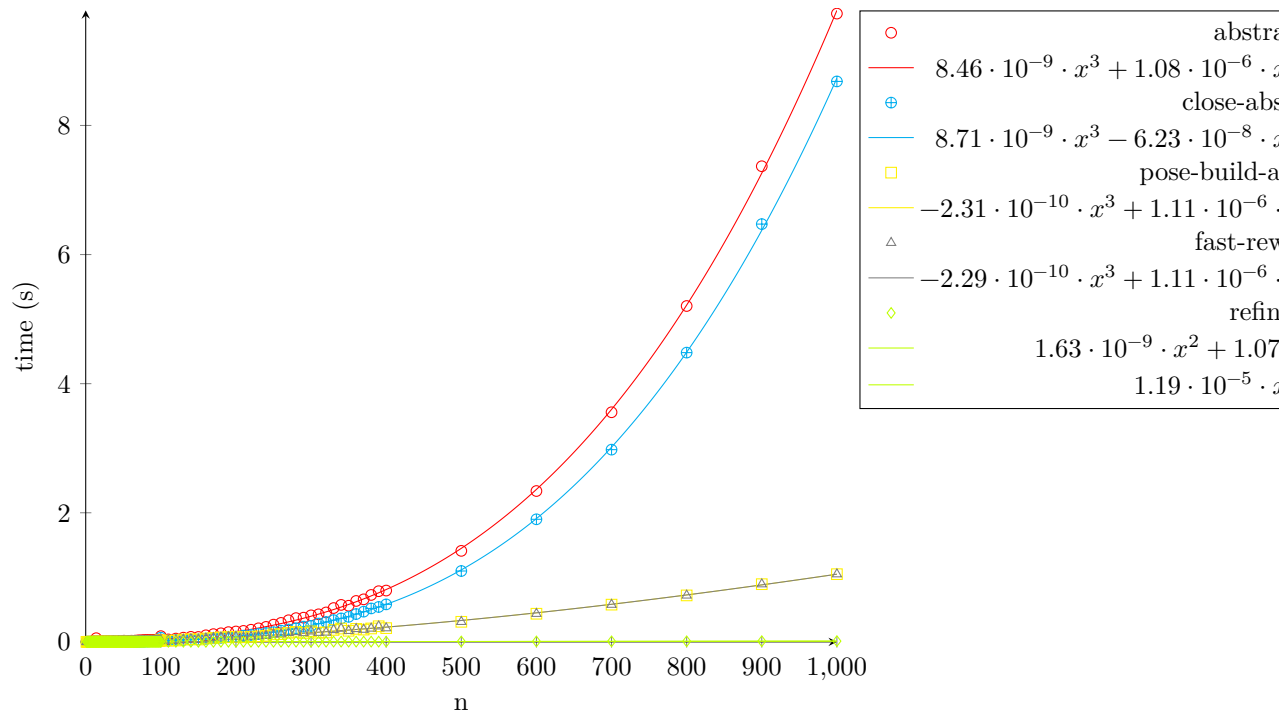
Figure 11: timing-rewrite-repeated-app-fast-rewrite

abstra

$8.46 \cdot 10^{-9} \cdot x^3 + 1.08 \cdot 10^{-6} \cdot $

close-abs

$8.71 \cdot 10^{-9} \cdot x^3 - 6.23 \cdot 10^{-8} \cdot $

pose-build-a

$-2.31 \cdot 10^{-10} \cdot x^3 + 1.11 \cdot 10^{-6} \cdot$

fast-rew

$-2.29 \cdot 10^{-10} \cdot x^3 + 1.11 \cdot 10^{-6} \cdot$

refin

$1.63 \cdot 10^{-9} \cdot x^2 + 1.07$

$1.19 \cdot 10^{-5} \cdot $

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Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract
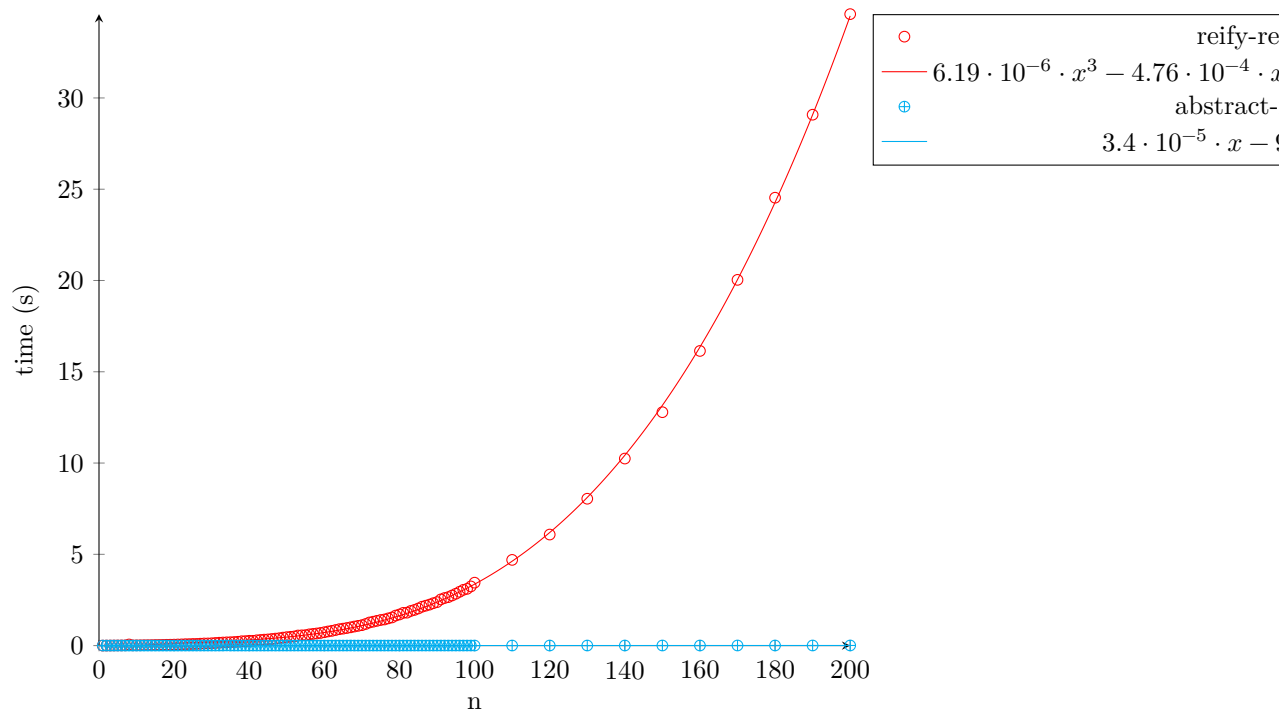
Figure 13: timing-typeclass-reification-let-in-HOAS

13

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

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
$2.64 \cdot 10^{-6} \cdot x^2 - 1.57 \cdot 10^{-3}$

fast-rewrite-real
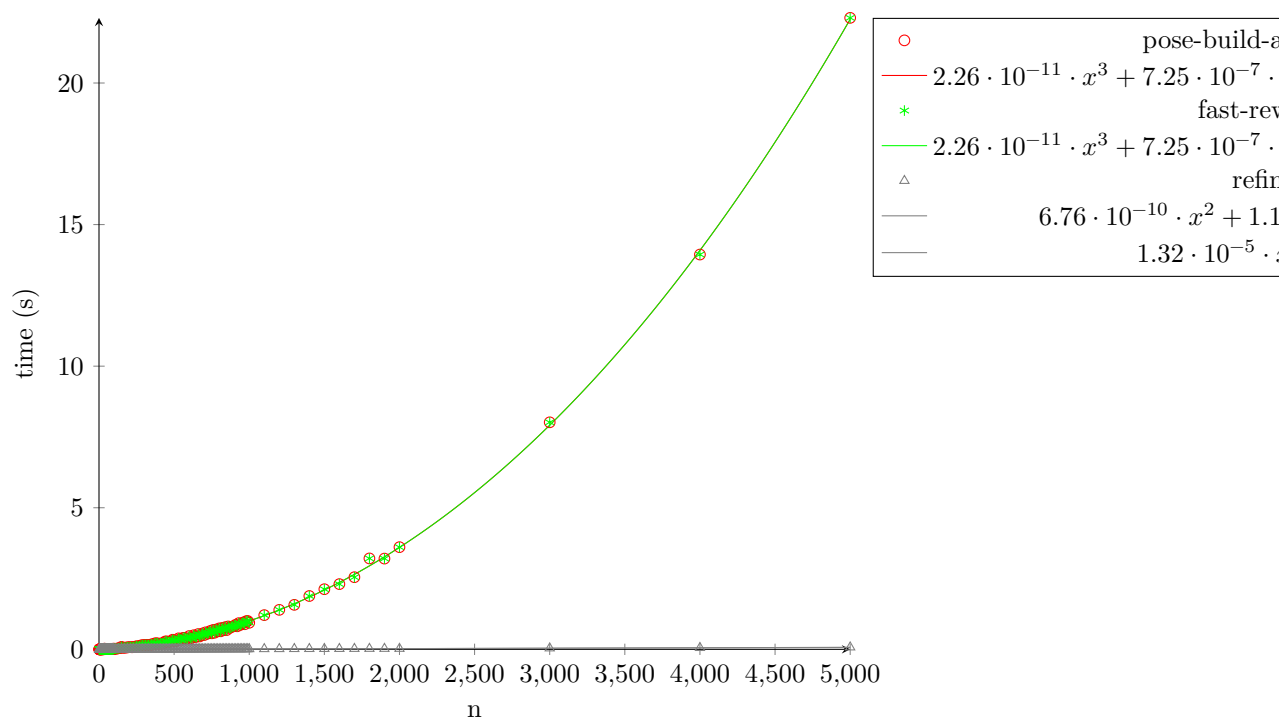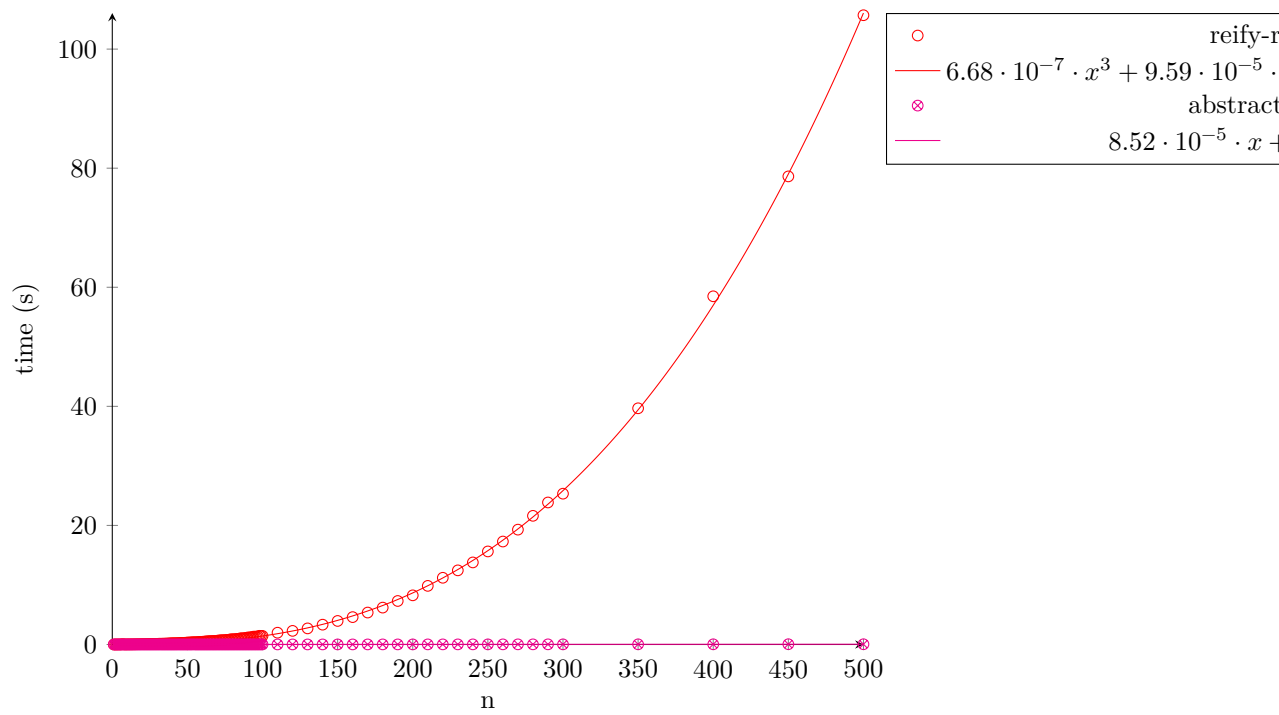$2.37 \cdot 10^{-6} \cdot x^2 - 1.6 \cdot 10^{-3}$

refine-real
$3.83 \cdot 10^{-7} \cdot x^2 - 3.41 \cdot 10^{-4} \cdot x$
$4.55 \cdot 10^{-4} \cdot x - 5.62 \cdot$

check-admit-cast-real
$3.71 \cdot 10^{-7} \cdot x^2 - 2.97 \cdot 10^{-4} \cdot x$

close-abstract-real
$2.75 \cdot 10^{-7} \cdot x^2 + 3.54 \cdot 10^{-5} \cdot x$

type-admit-real
$3.48 \cdot 10^{-7} \cdot x^2 - 2.83 \cdot 10^{-4} \cdot x$

type-admit-cast-real
$3.56 \cdot 10^{-7} \cdot x^2 - 2.66 \cdot 10^{-4} \cdot x$

check-pf-cast-real
$3.33 \cdot 10^{-7} \cdot x^2 - 2.45 \cdot 10^{-4} \cdot x$

type-pf-cast-real
$3.37 \cdot 10^{-7} \cdot x^2 - 2.36 \cdot 10^{-4} \cdot x$

check-admit-real
$2.34 \cdot 10^{-7} \cdot x^2 - 1.1 \cdot 10^{-4} \cdot x$

build-eval-thunk-real
$1.09 \cdot 10^{-4} \cdot x - 7.72 \cdot$

build-thunk-real
$1.08 \cdot 10^{-4} \cdot x - 8.09 \cdot$

check-I-real
$1.94 \cdot 10^{-5} \cdot x - 5.82 \cdot$

type-I-real
$1.89 \cdot 10^{-5} \cdot x - 6.8 \cdot$

build-I-real
$1.1 \cdot 10^{-5} \cdot x - 6.3 \cdot$

build-admit-real
$9.46 \cdot 10^{-6} \cdot x - 5.22 \cdot$

build-pf-cast-real
$9.44 \cdot 10^{-6} \cdot x - 4.42 \cdot$

build-admit-cast-real
$9.94 \cdot 10^{-6} \cdot x - 4.78 \cdot$
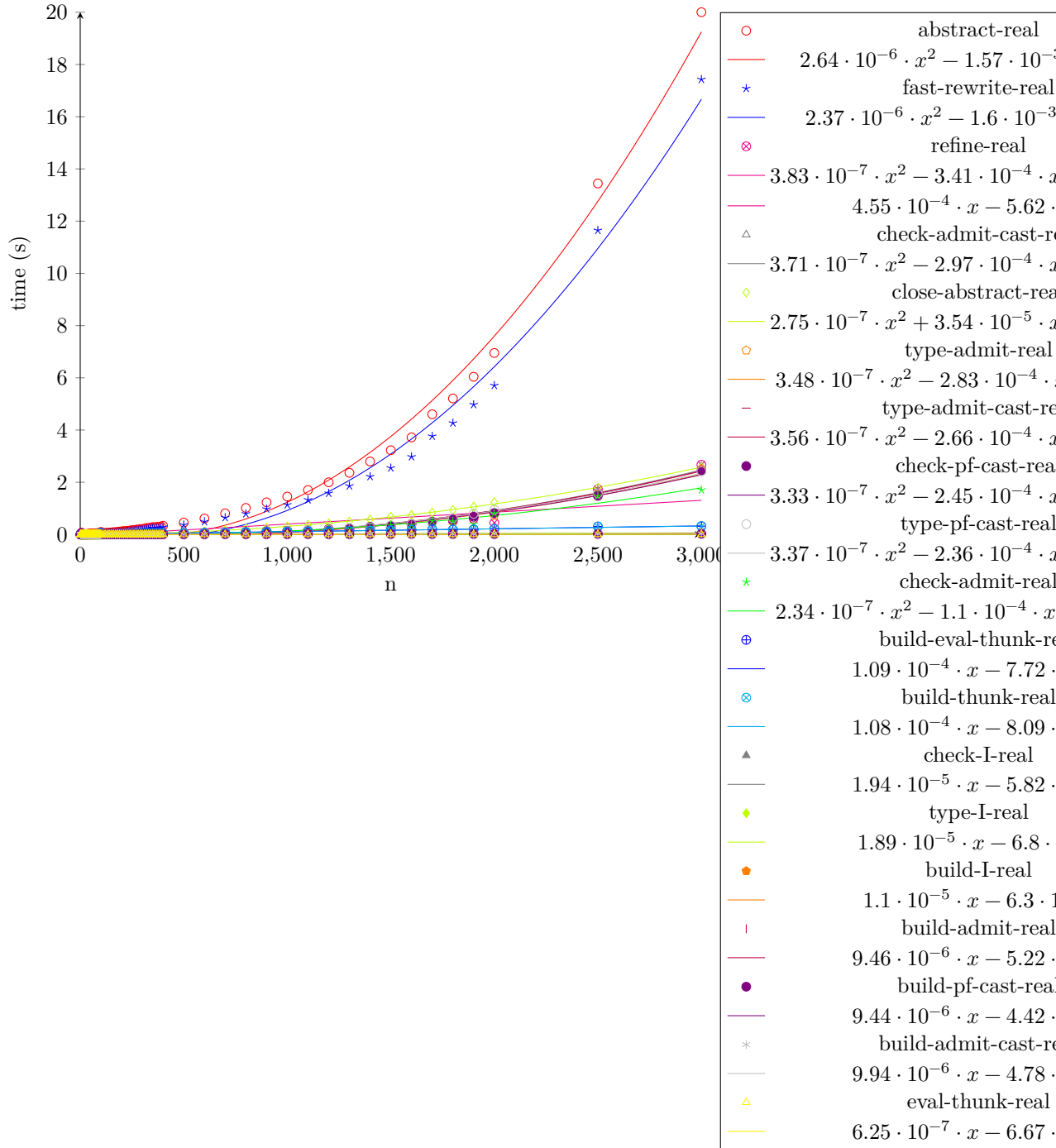
eval-thunk-real
$6.25 \cdot 10^{-7} \cdot x - 6.67 \cdot$

Figure 15: timing-rewrite-repeated-app-fast-rewrite-ltac2

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