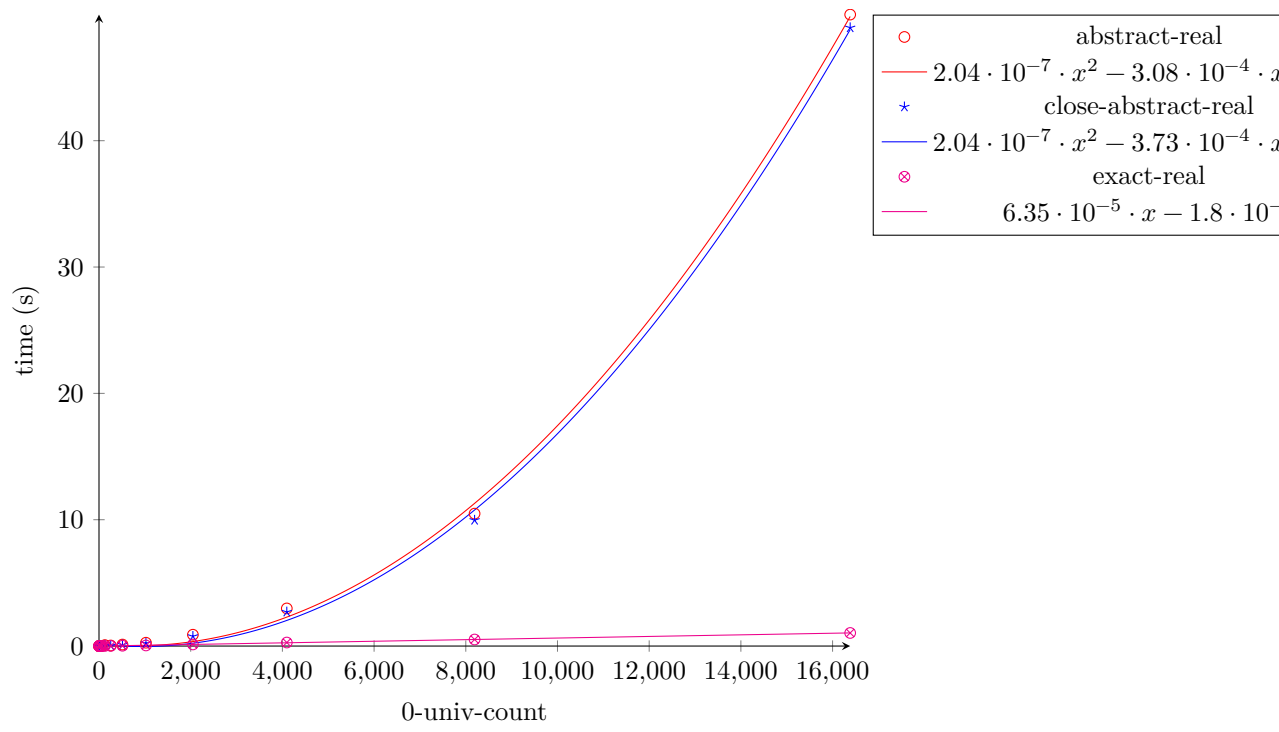Figure 1: timing-pattern

1

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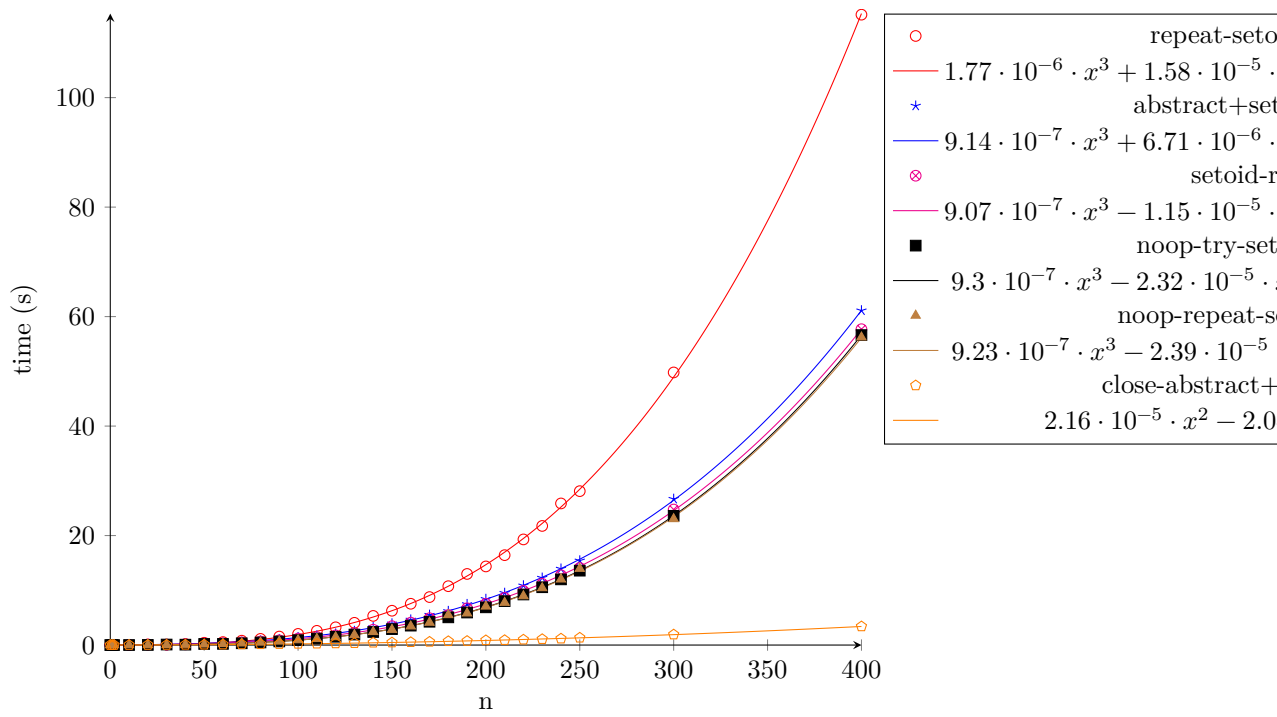
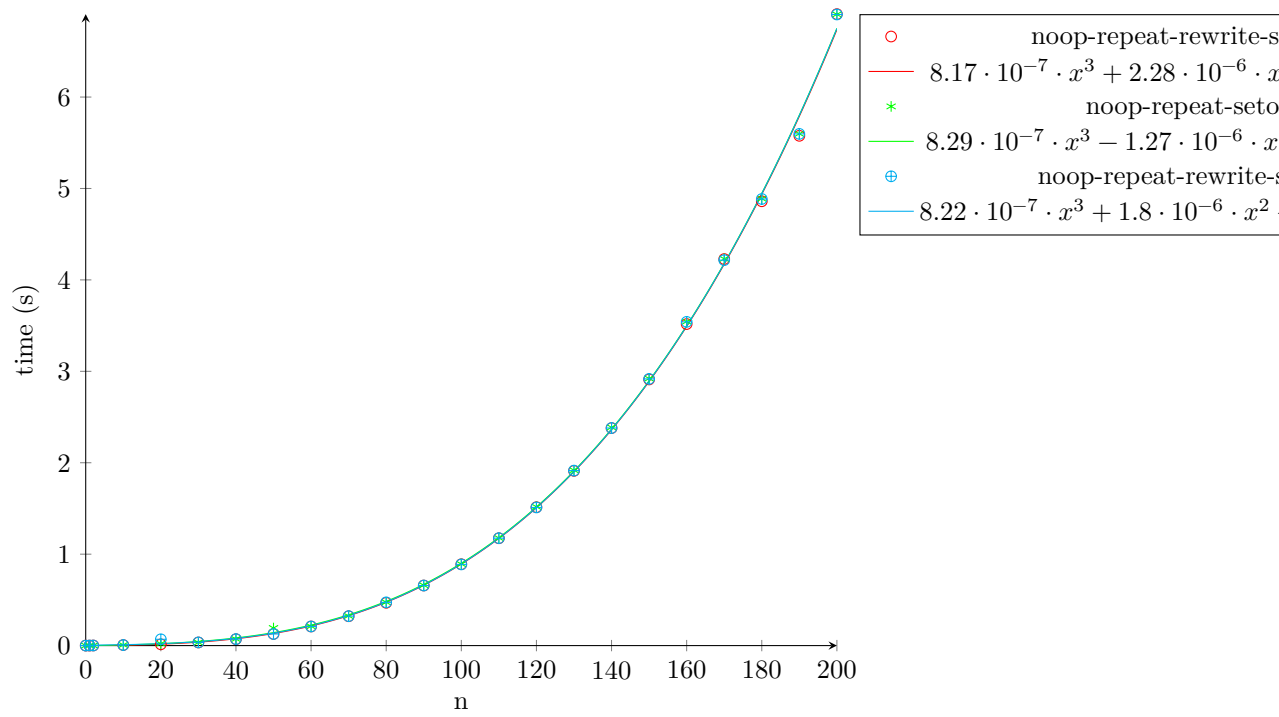Figure 3: timing-repeat-setoid-rewrite-under-binders

3

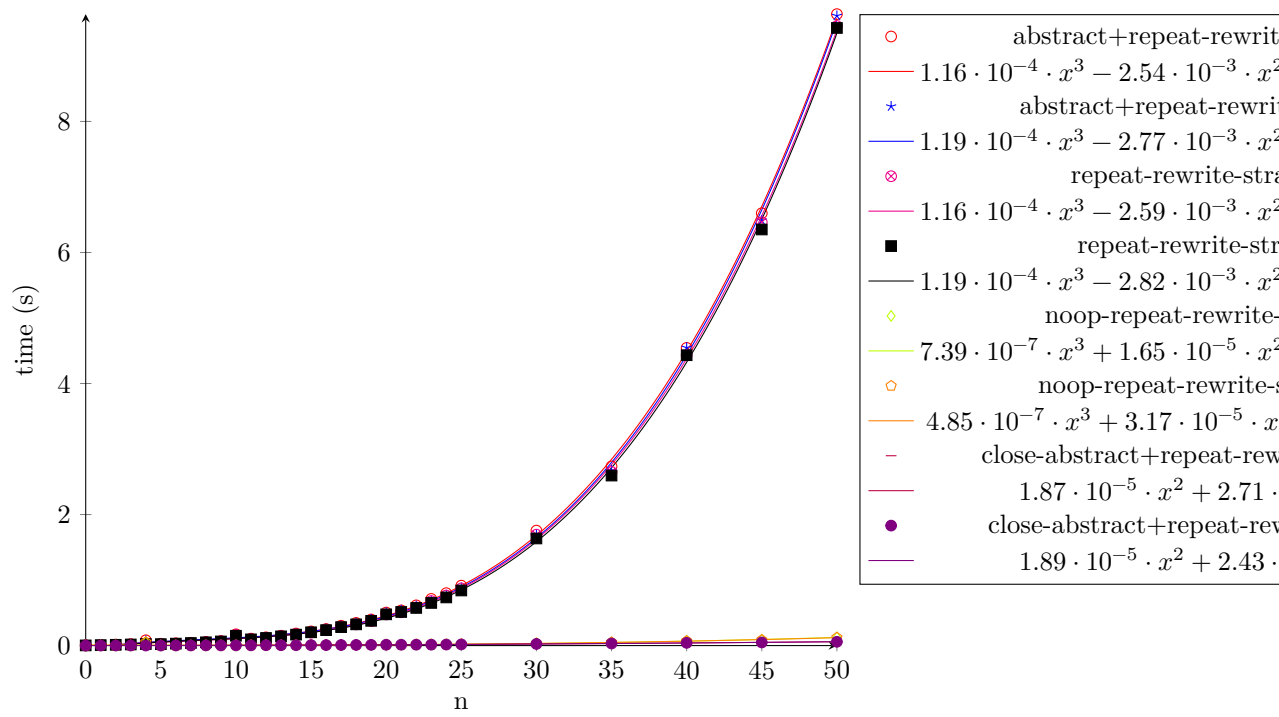Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

4

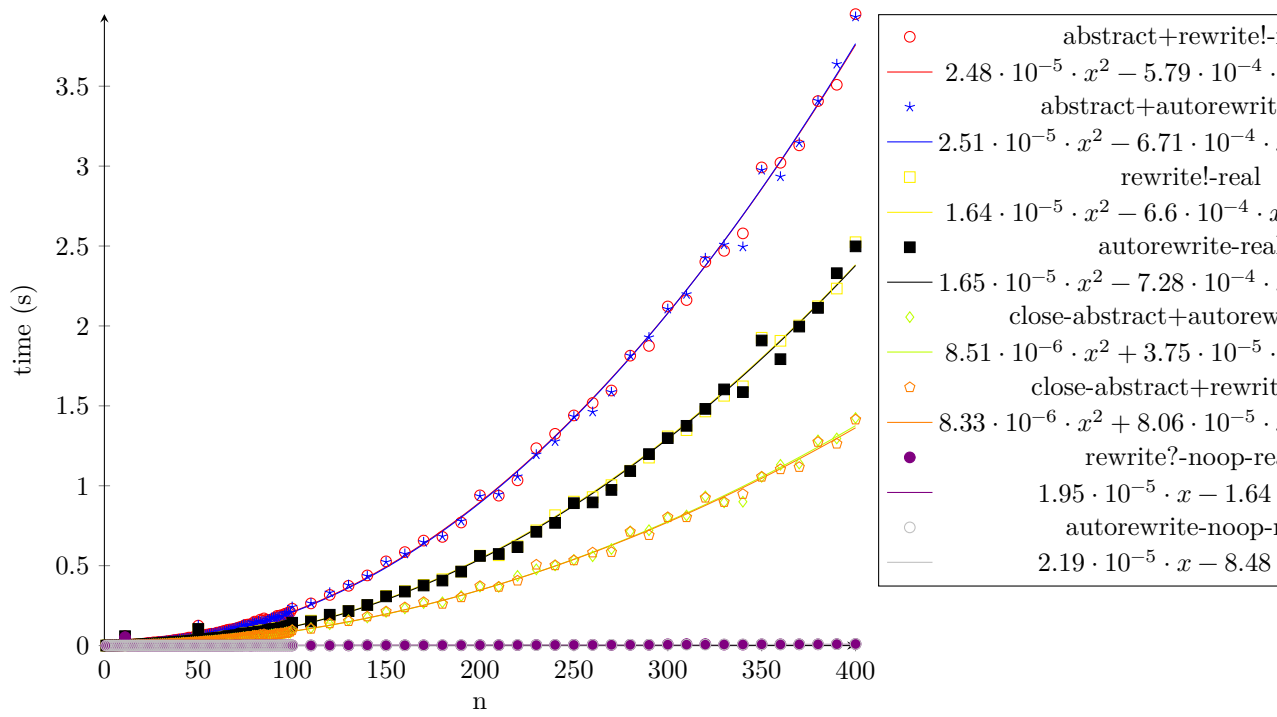Figure 5: timing-rewrite-strat-under-binders

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

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

The figure legend contains the following entries:

- autorewrite-noop-r
- $3.56 \cdot 10^{-8} \cdot x^2 + 5.26 \cdot 10^{-6} \cdot$
- try-rewrite!-noop-r
- $3.55 \cdot 10^{-8} \cdot x^2 + 5.02 \cdot 10^{-6} \cdot$
- try-rewrite?-noop-r
- $3.55 \cdot 10^{-8} \cdot x^2 + 4.04 \cdot 10^{-6} \cdot$
- try-rewrite-noop-r
- $3.56 \cdot 10^{-8} \cdot x^2 + 3.35 \cdot 10^{-6} \cdot$
- try-ssr-rewrite?-noop
- $4.71 \cdot 10^{-7} \cdot x - 2.1 \cdot$
- try-ssr-rewrite!-noop
- $4.91 \cdot 10^{-7} \cdot x - 1.95$
- try-ssr-rewrite-noop
- $4.65 \cdot 10^{-7} \cdot x - 2.01$

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

8

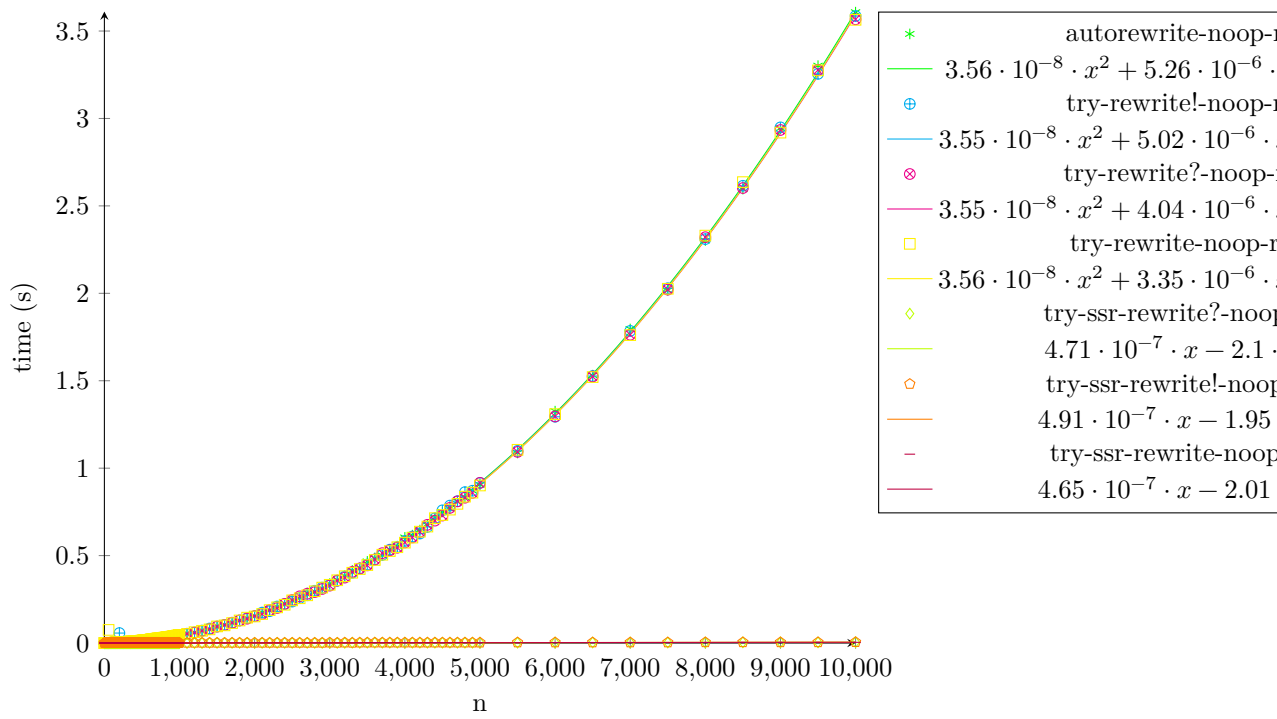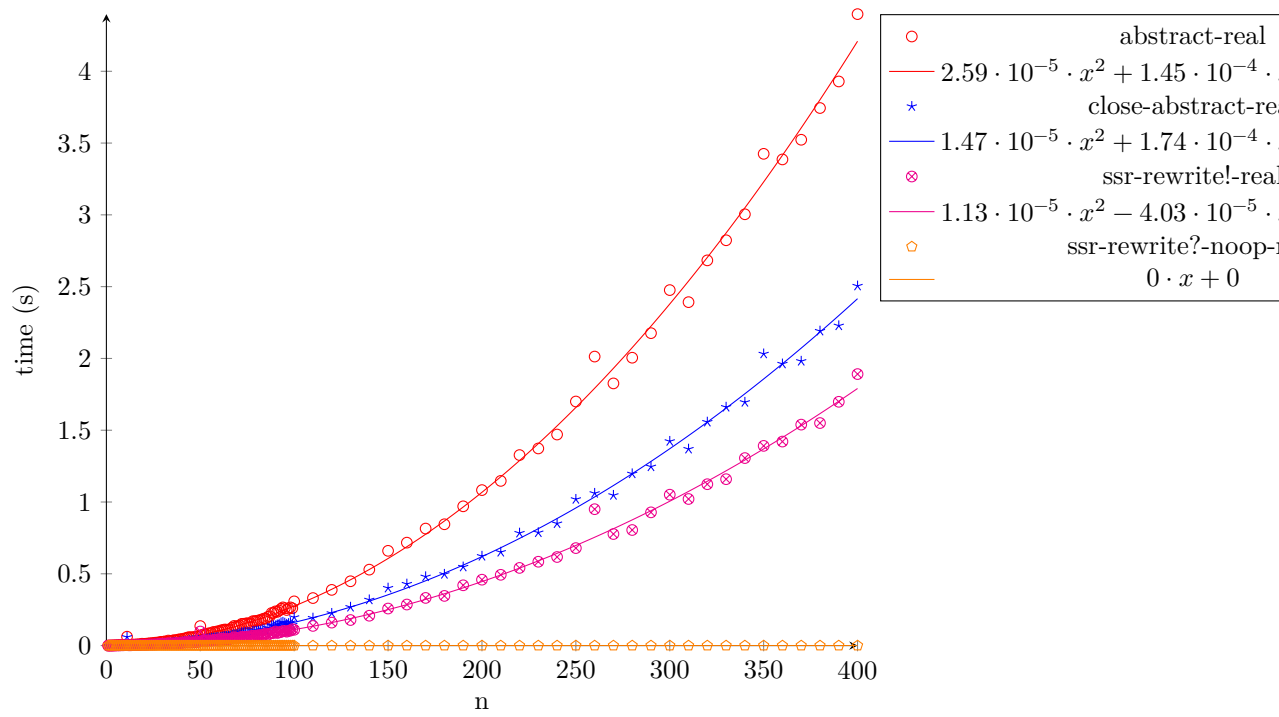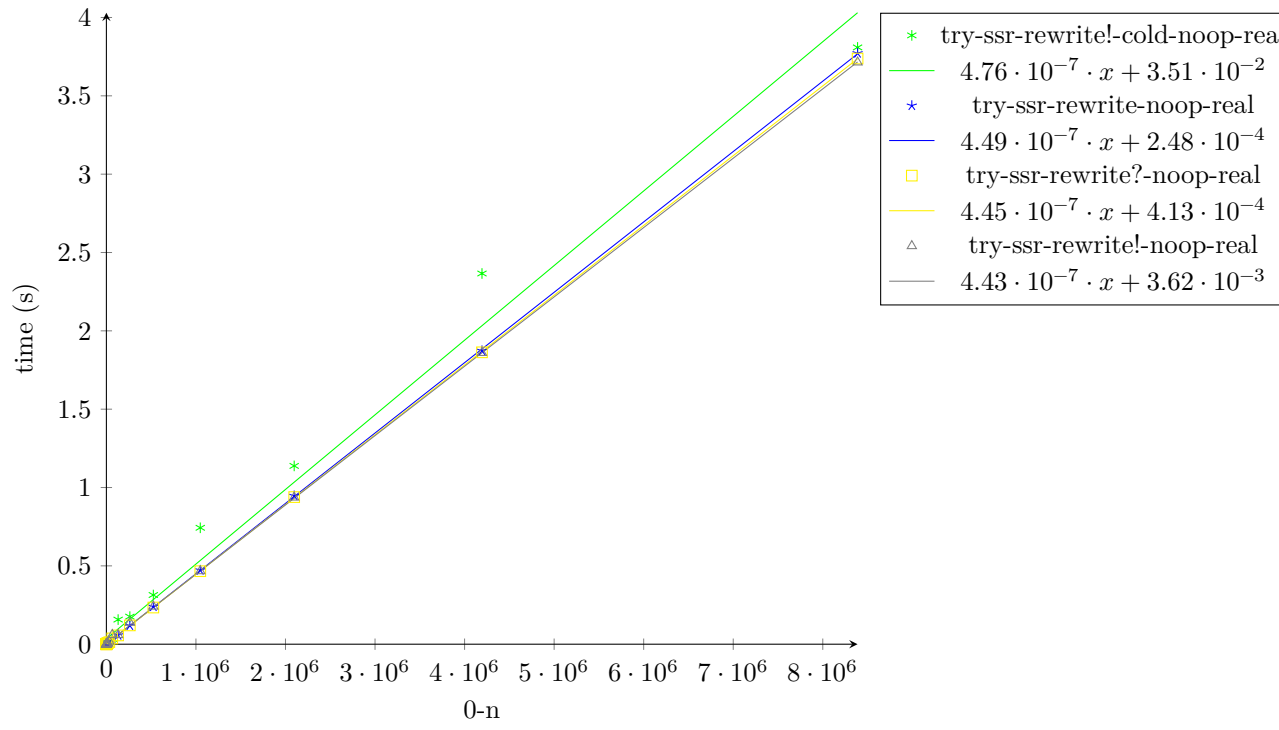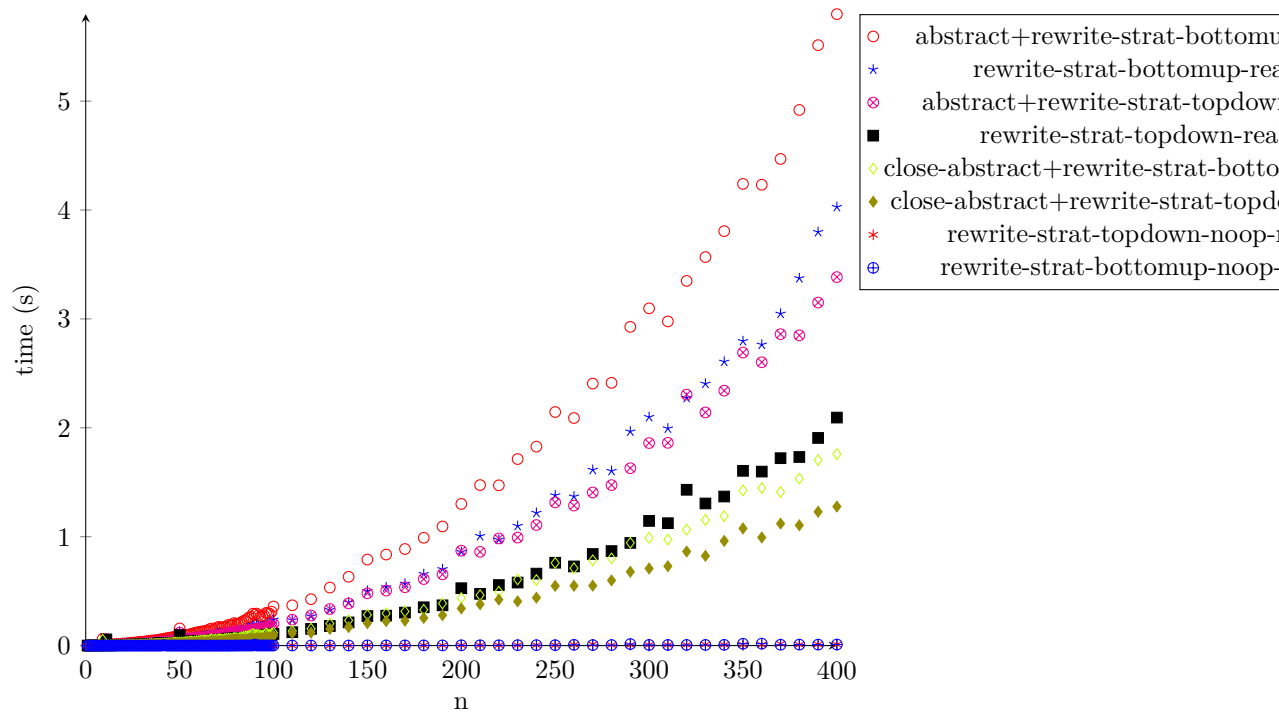Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1

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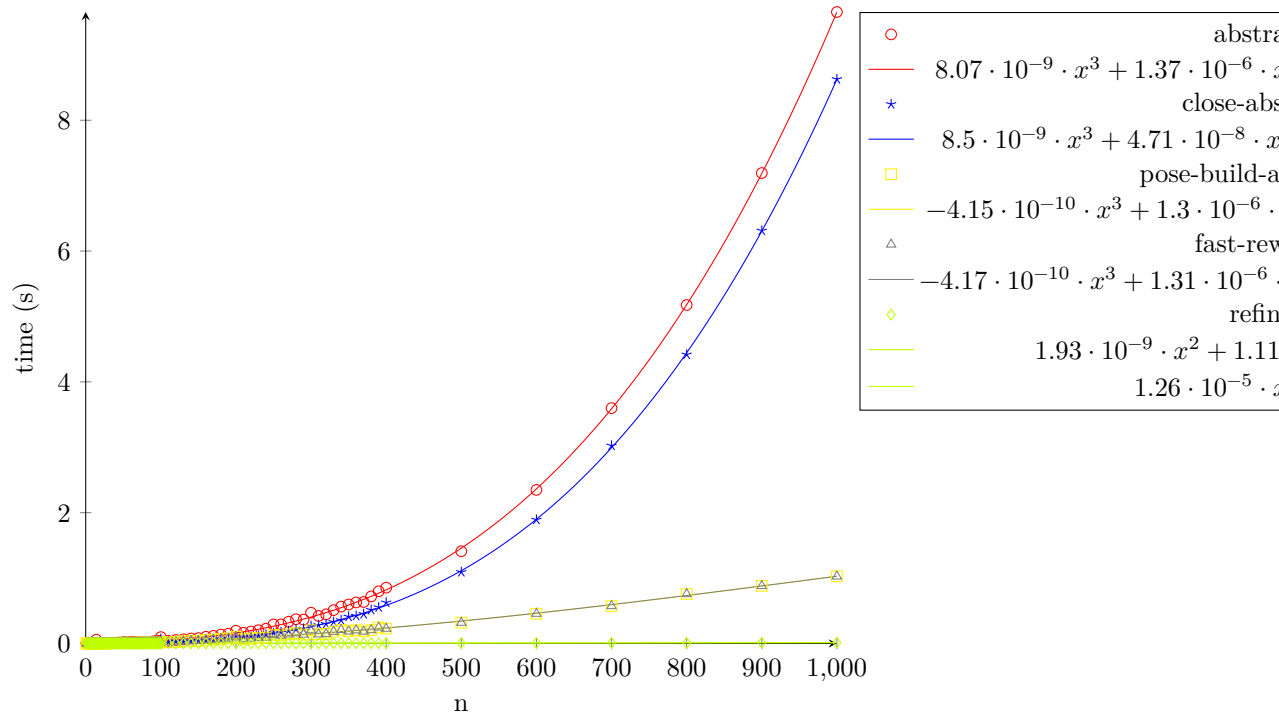
10

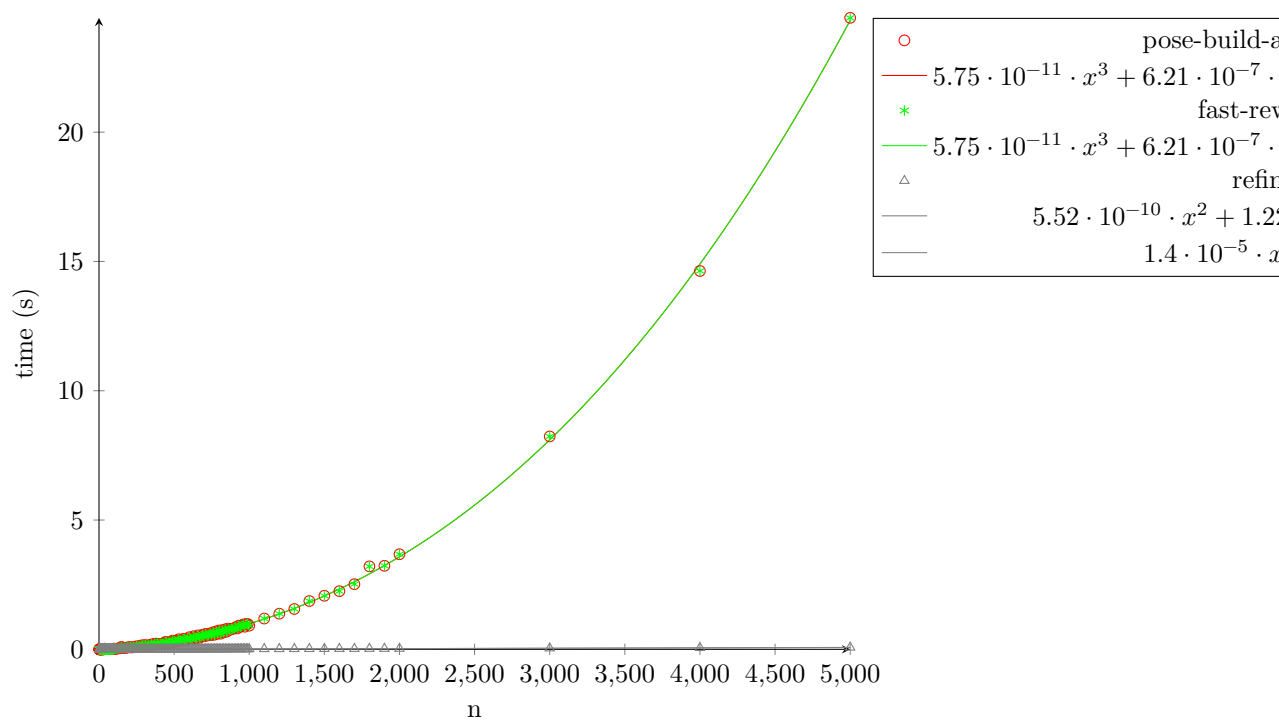Figure 11: timing-rewrite-repeated-app-fast-rewrite

11

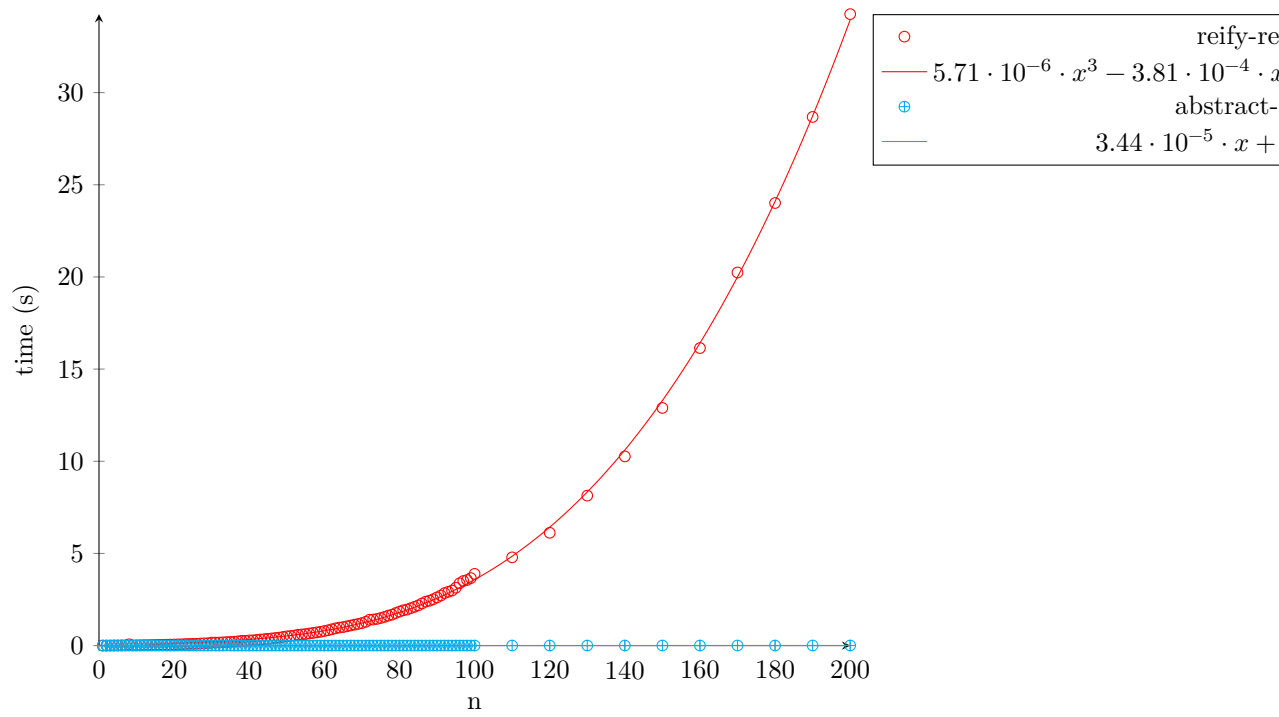Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

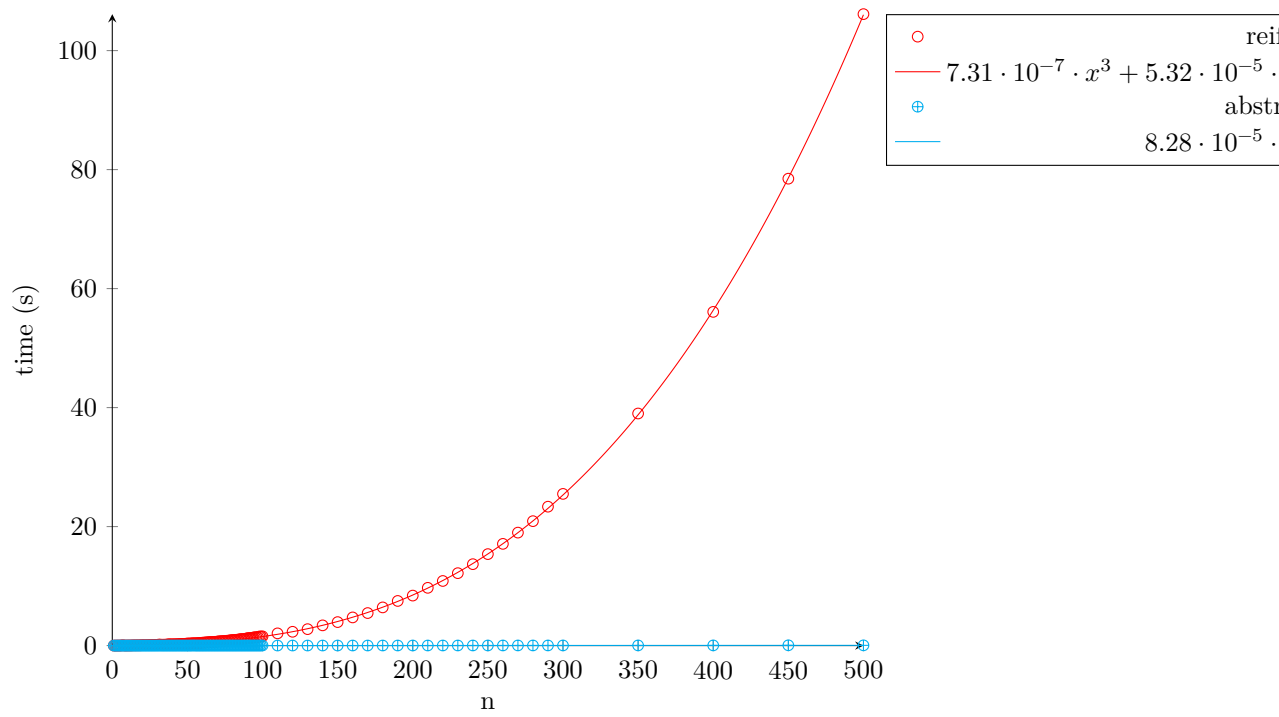Figure 13: timing-typeclass-reification-let-in-HOAS

13

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

time (s)

18
16
14
12
10
8
6
4
2

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

n

abstract-real
$2.52 \cdot 10^{-6} \cdot x^2 - 1.44 \cdot 10^{-3}$
fast-rewrite-real
$2.26 \cdot 10^{-6} \cdot x^2 - 1.49 \cdot 10^{-3}$
check-pf-cast-real
$3.52 \cdot 10^{-7} \cdot x^2 - 2.8 \cdot 10^{-4} \cdot x$
refine-real
$3.51 \cdot 10^{-7} \cdot x^2 - 2.95 \cdot 10^{-4} \cdot x$
$4.34 \cdot 10^{-4} \cdot x - 5.28$
close-abstract-real
$2.61 \cdot 10^{-7} \cdot x^2 + 4.24 \cdot 10^{-5} \cdot x$
type-admit-real
$3.47 \cdot 10^{-7} \cdot x^2 - 2.73 \cdot 10^{-4} \cdot x$
check-admit-cast-real
$3.4 \cdot 10^{-7} \cdot x^2 - 2.67 \cdot 10^{-4} \cdot x$
type-pf-cast-real
$3.27 \cdot 10^{-7} \cdot x^2 - 2.36 \cdot 10^{-4} \cdot x$
type-admit-cast-real
$3.22 \cdot 10^{-7} \cdot x^2 - 2.27 \cdot 10^{-4} \cdot x$
check-admit-real
$2.18 \cdot 10^{-7} \cdot x^2 - 9.16 \cdot 10^{-5} \cdot x$
build-eval-thunk-real
$1.07 \cdot 10^{-4} \cdot x - 1.42$
build-thunk-real
$1.06 \cdot 10^{-4} \cdot x - 1.9$
check-I-real
$1.93 \cdot 10^{-5} \cdot x - 4.91$
type-I-real
$1.87 \cdot 10^{-5} \cdot x - 5.13$
build-I-real
$1.11 \cdot 10^{-5} \cdot x - 5.56$
build-pf-cast-real
$9.38 \cdot 10^{-6} \cdot x - 3.67$
build-admit-real
$9.52 \cdot 10^{-6} \cdot x - 4.1$
build-admit-cast-real
$1 \cdot 10^{-5} \cdot x - 3.77 \cdot 1$
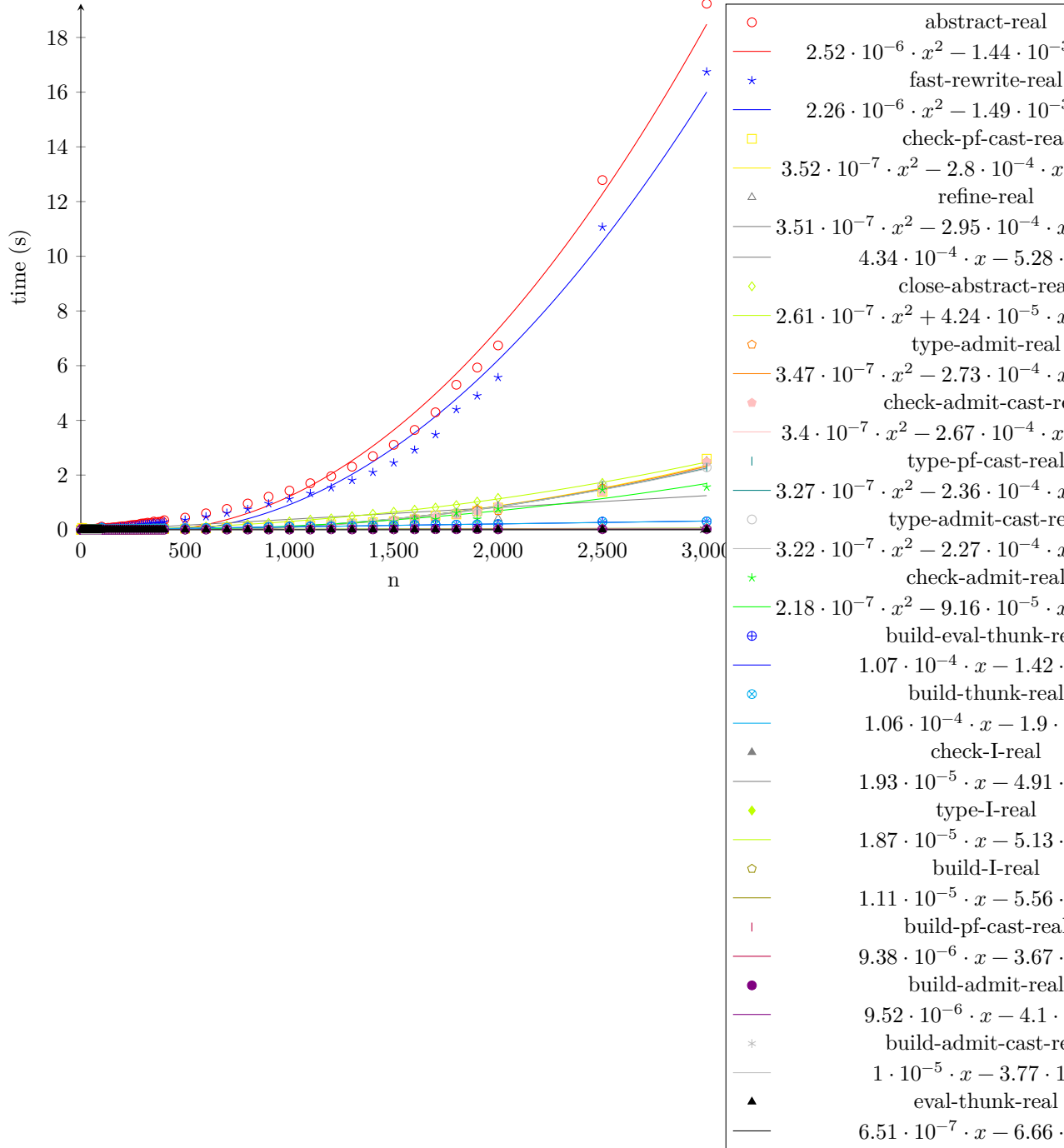eval-thunk-real
$6.51 \cdot 10^{-7} \cdot x - 6.66$

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

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