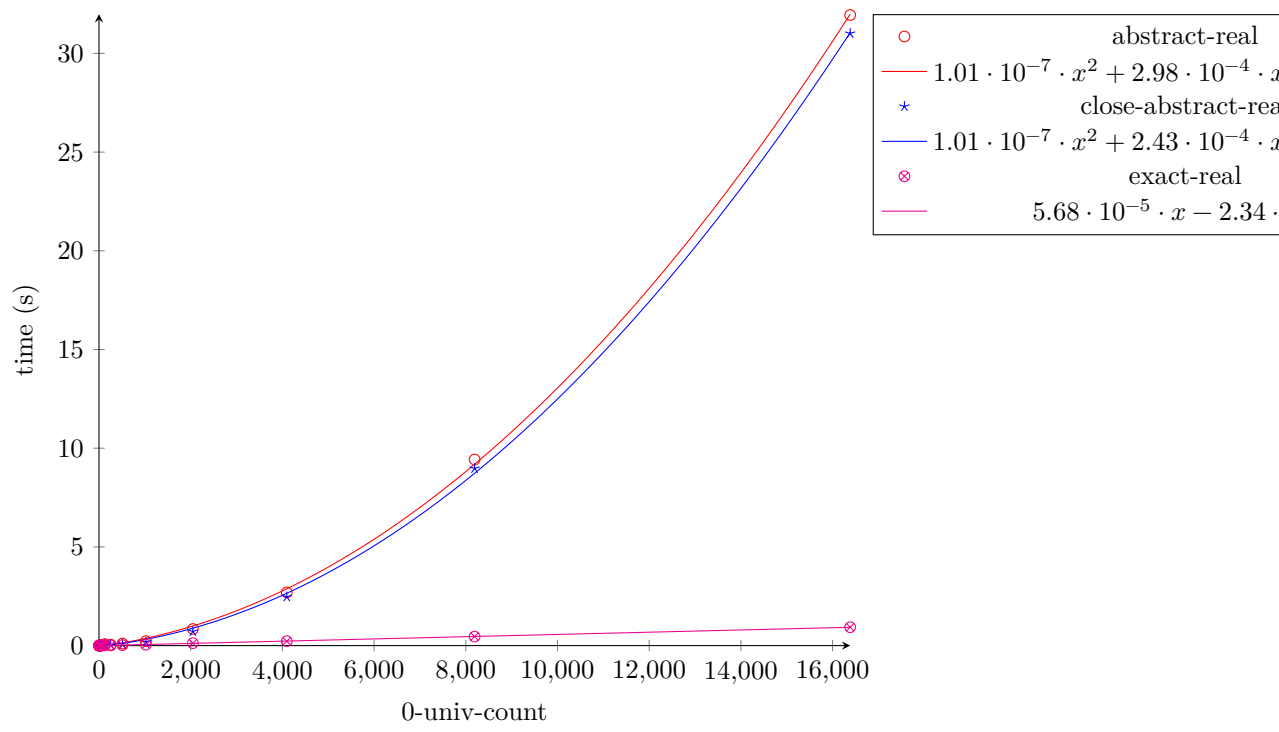Figure 1: timing-pattern

1

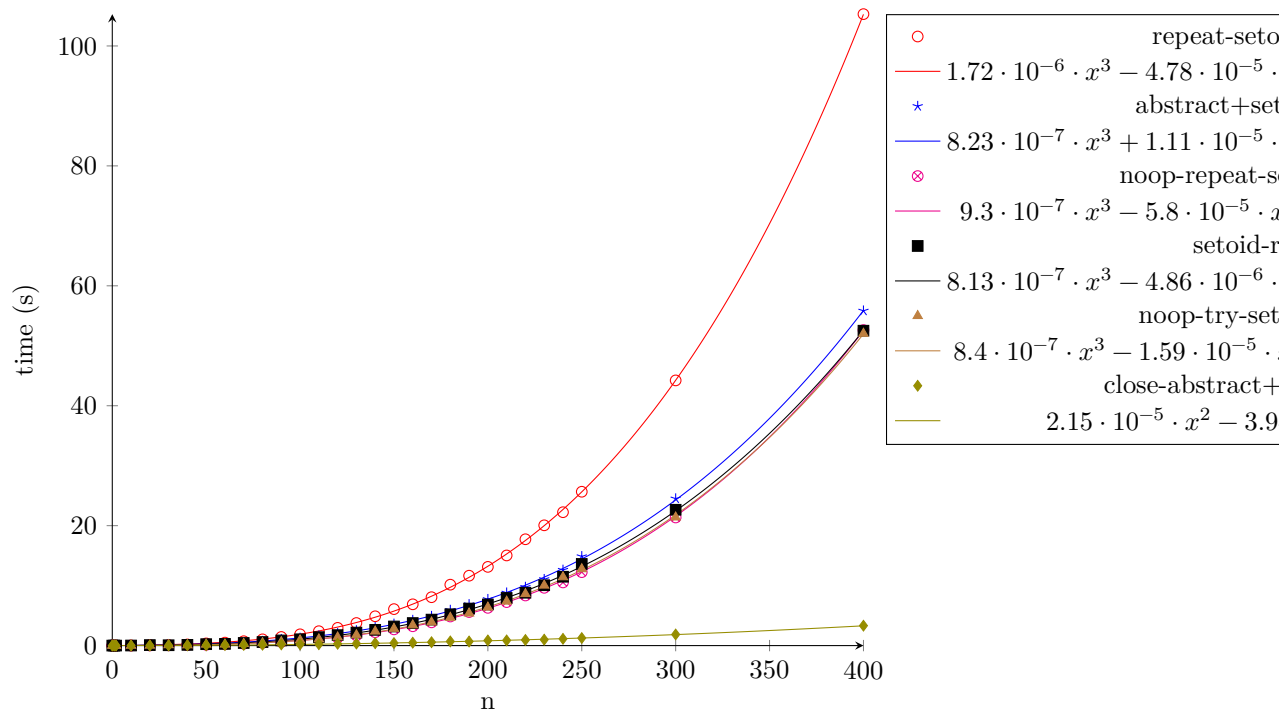Figure 2: timing-n-polymorphic-universes param-1-n   0

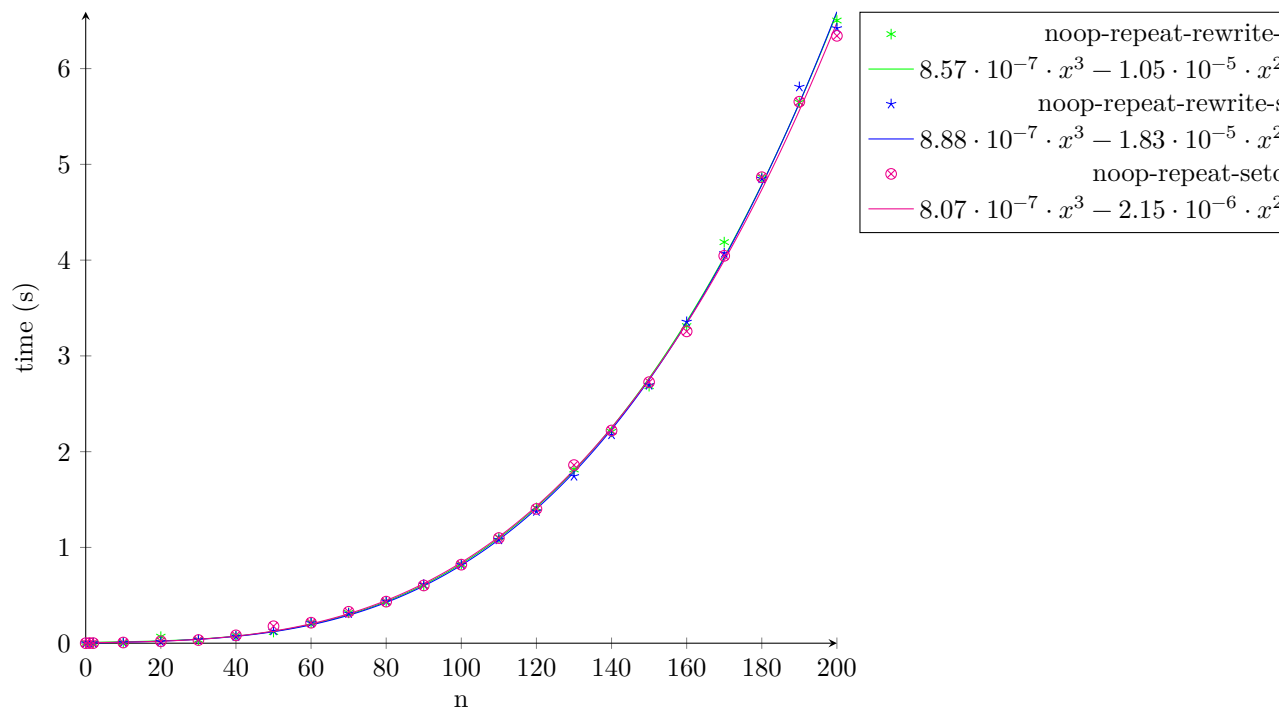Figure 3: timing-repeat-setoid-rewrite-under-binders

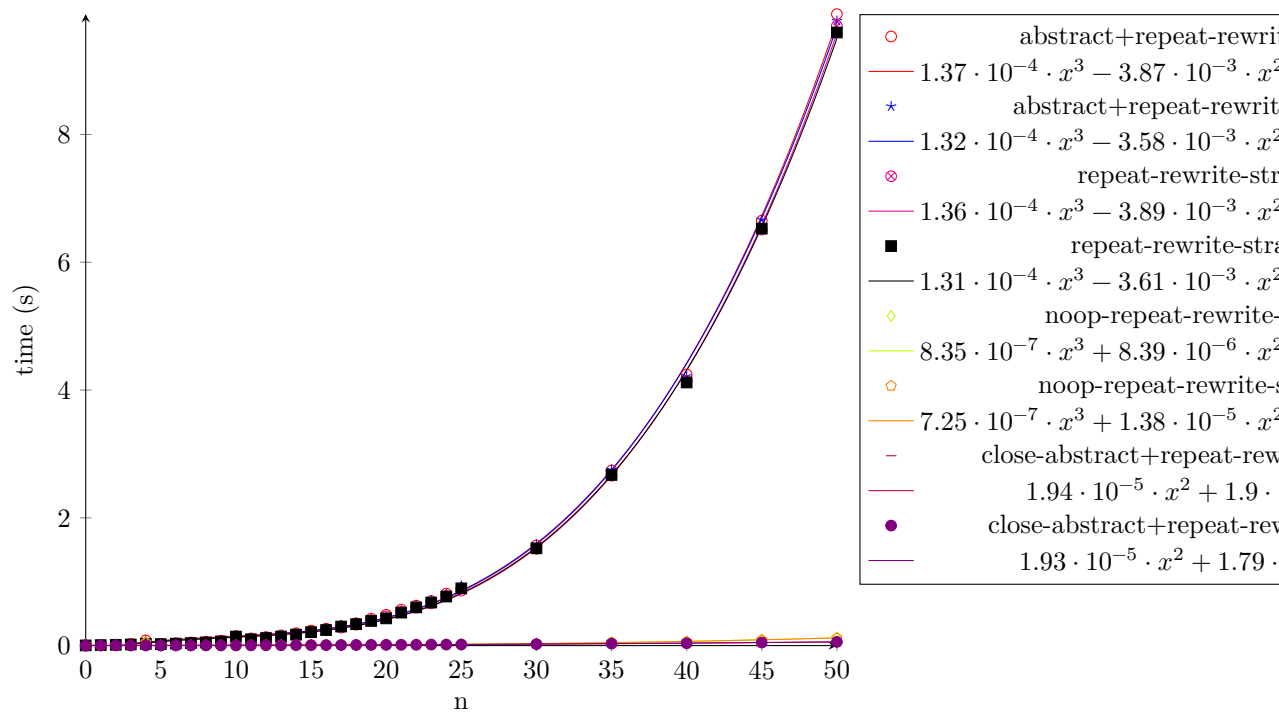Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

4

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

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

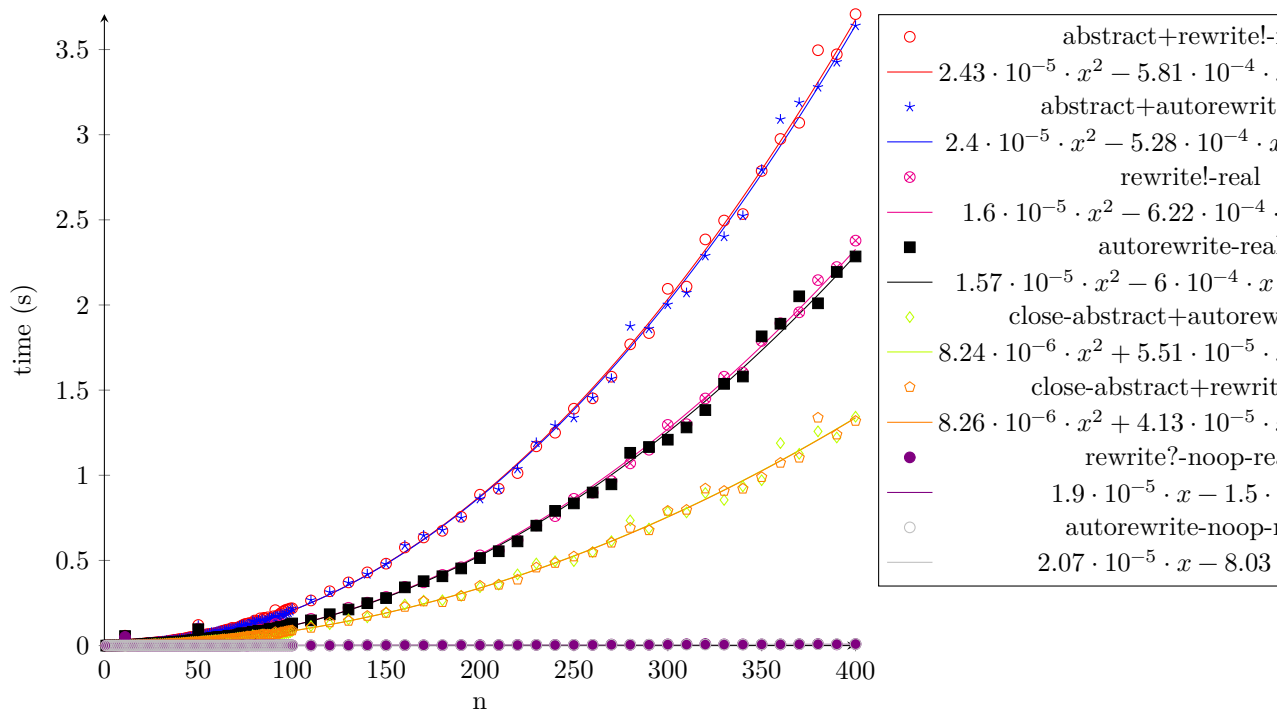Figure 7: timing-rewrite-repeated-app-autorewrite-noop

7

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

8

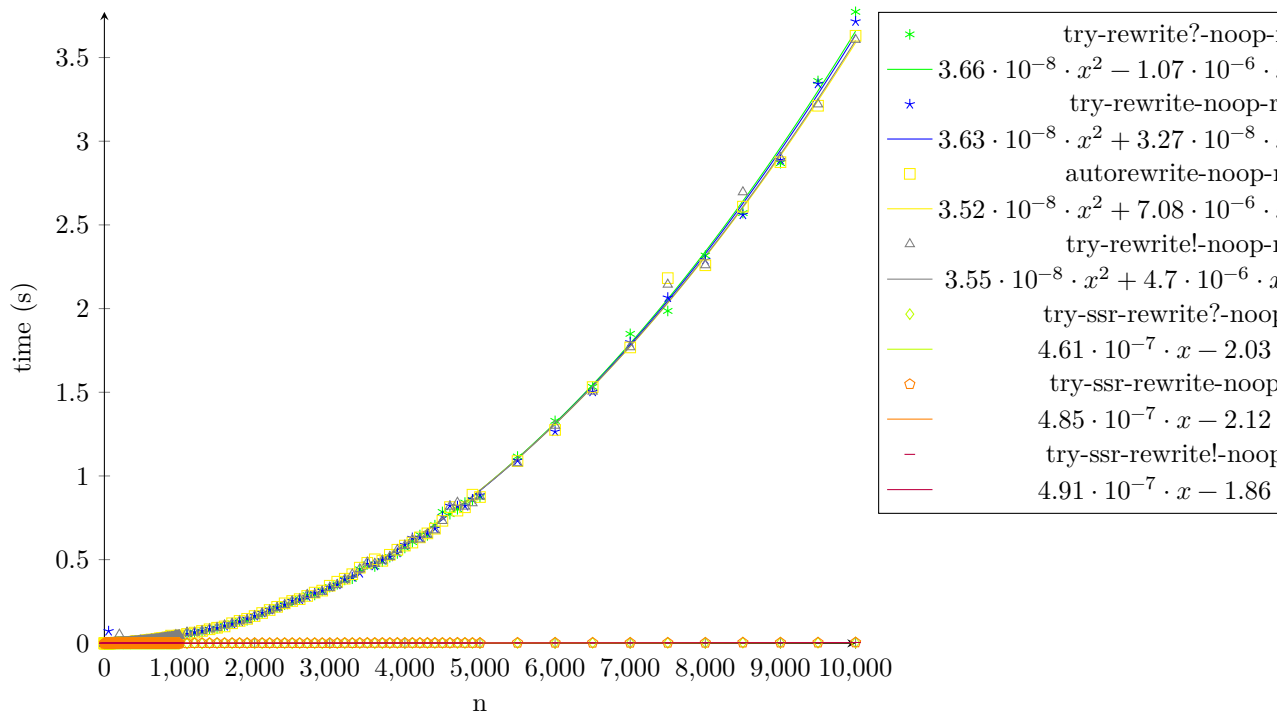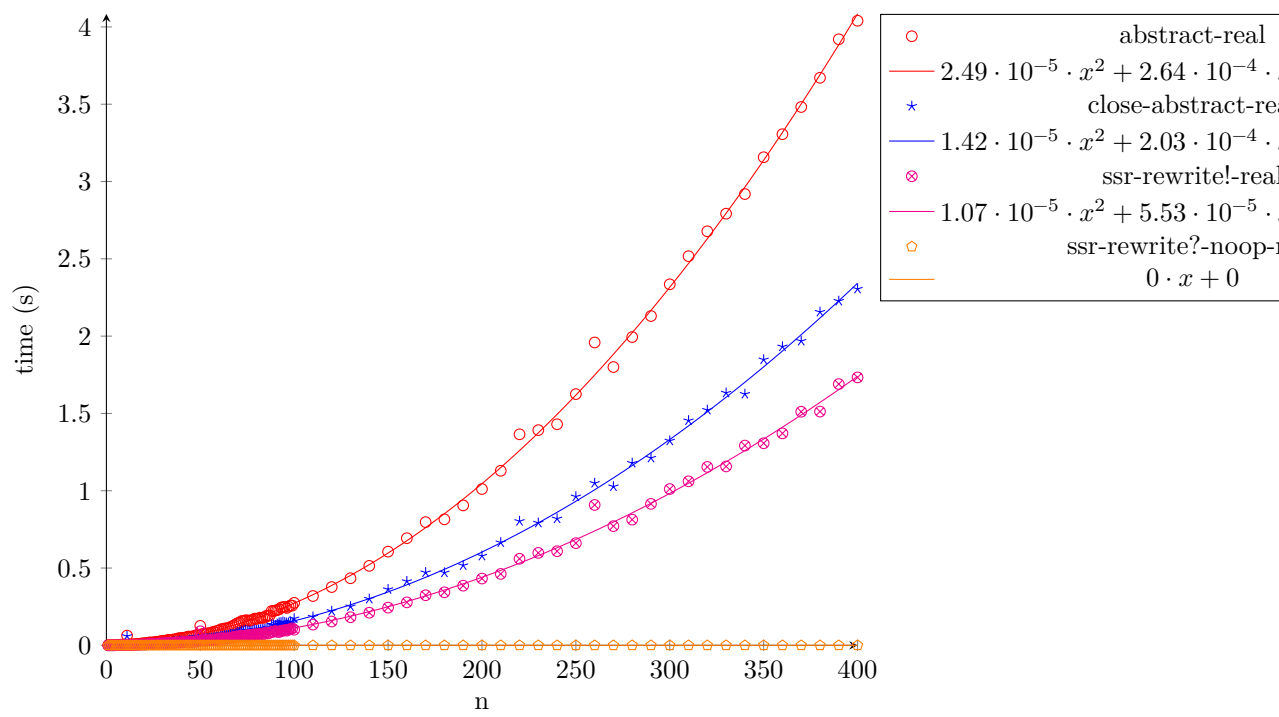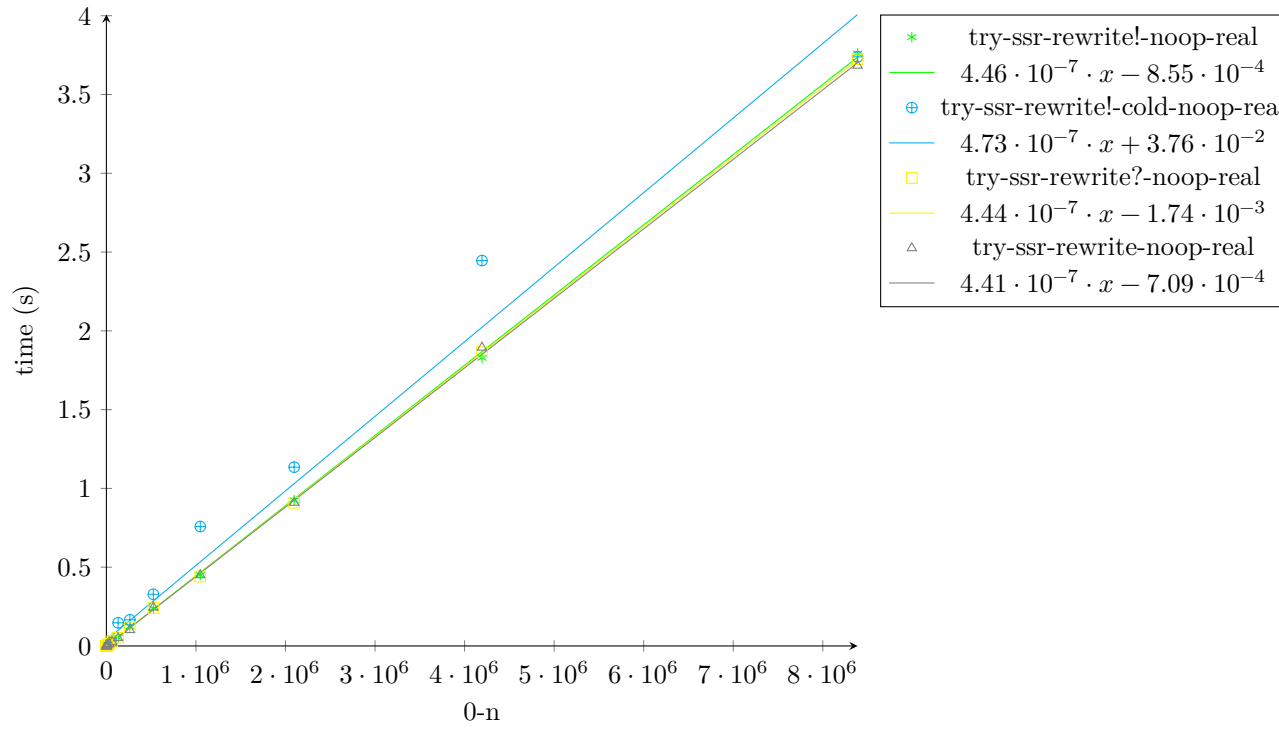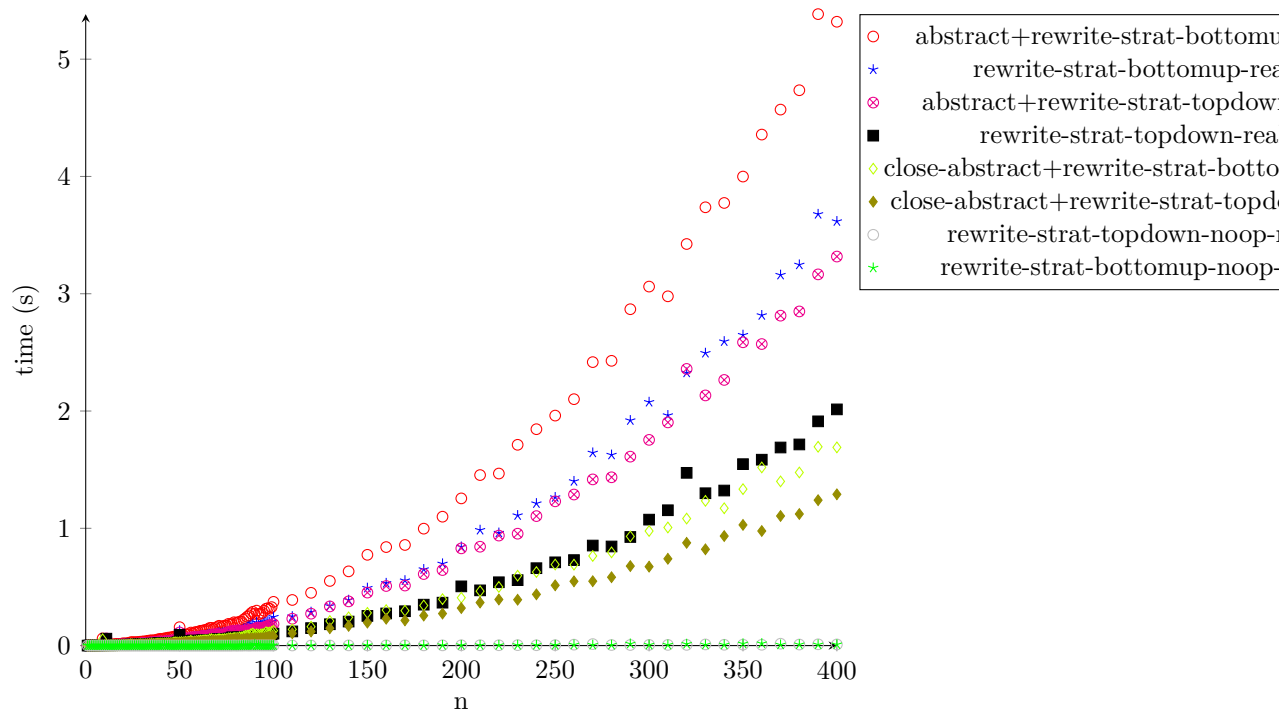Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn   1

Figure 10: timing-rewrite-repeated-app-rewrite-strat
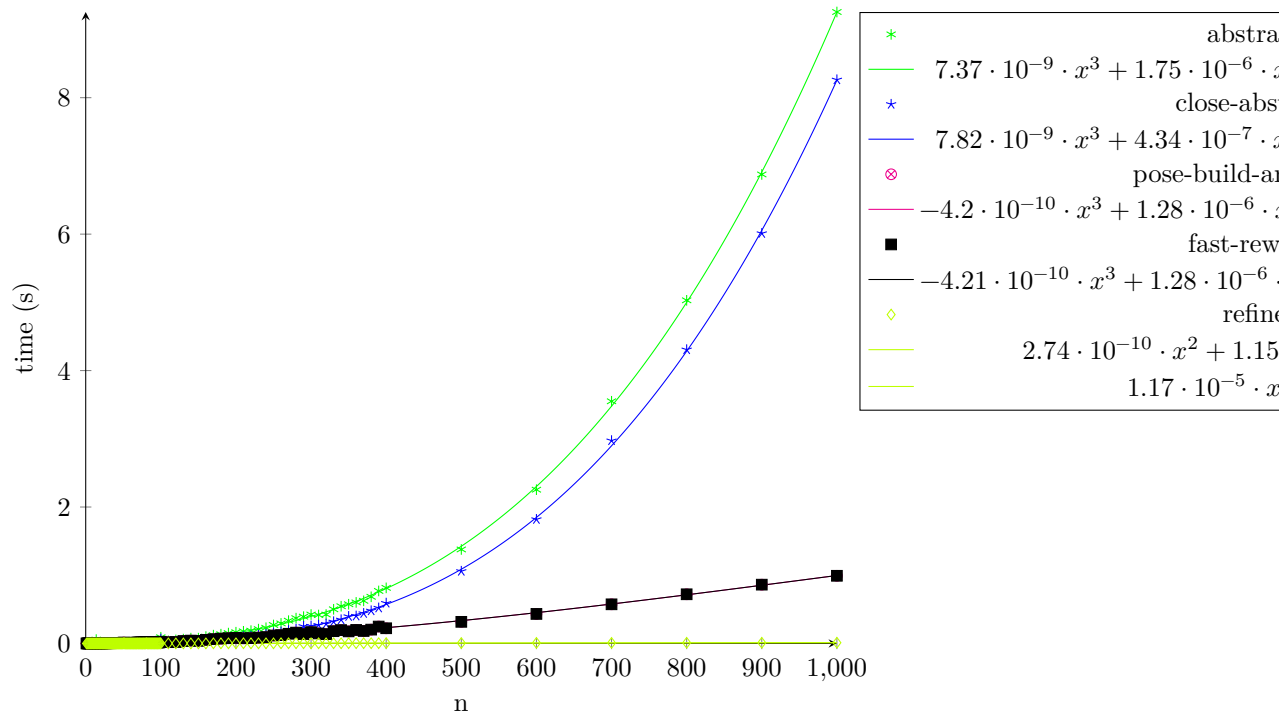
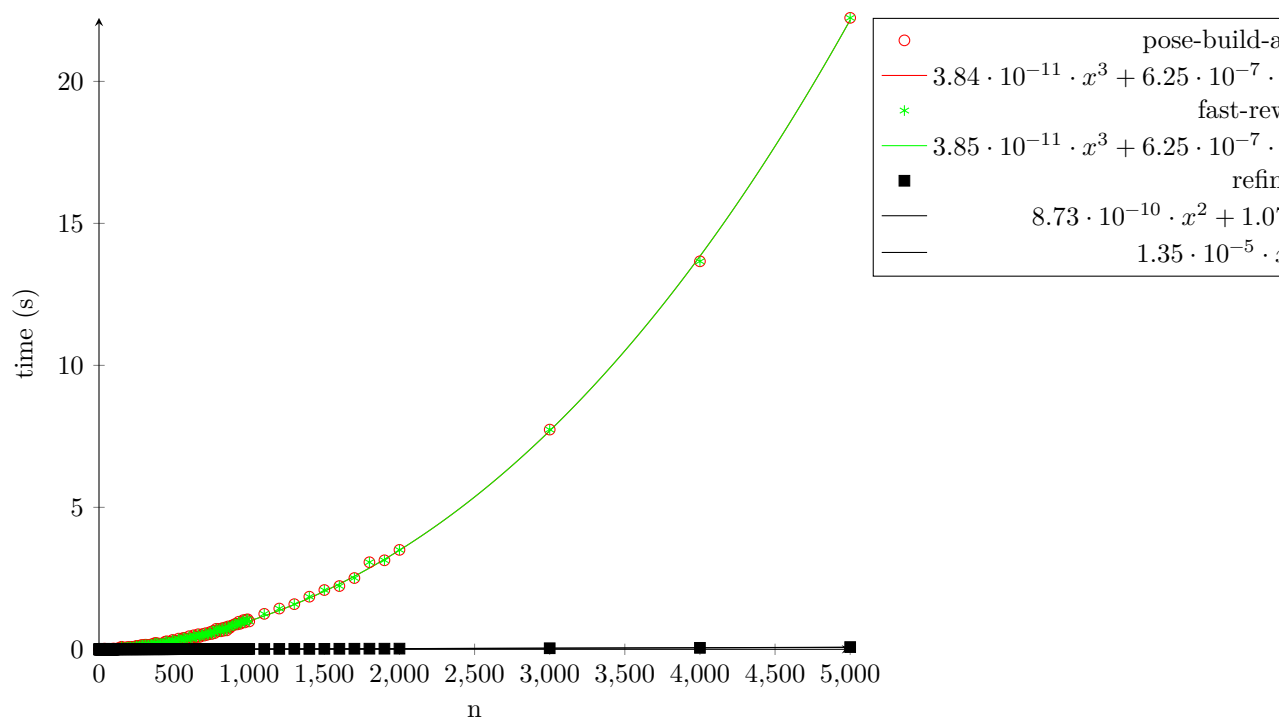Figure 11: timing-rewrite-repeated-app-fast-rewrite

11

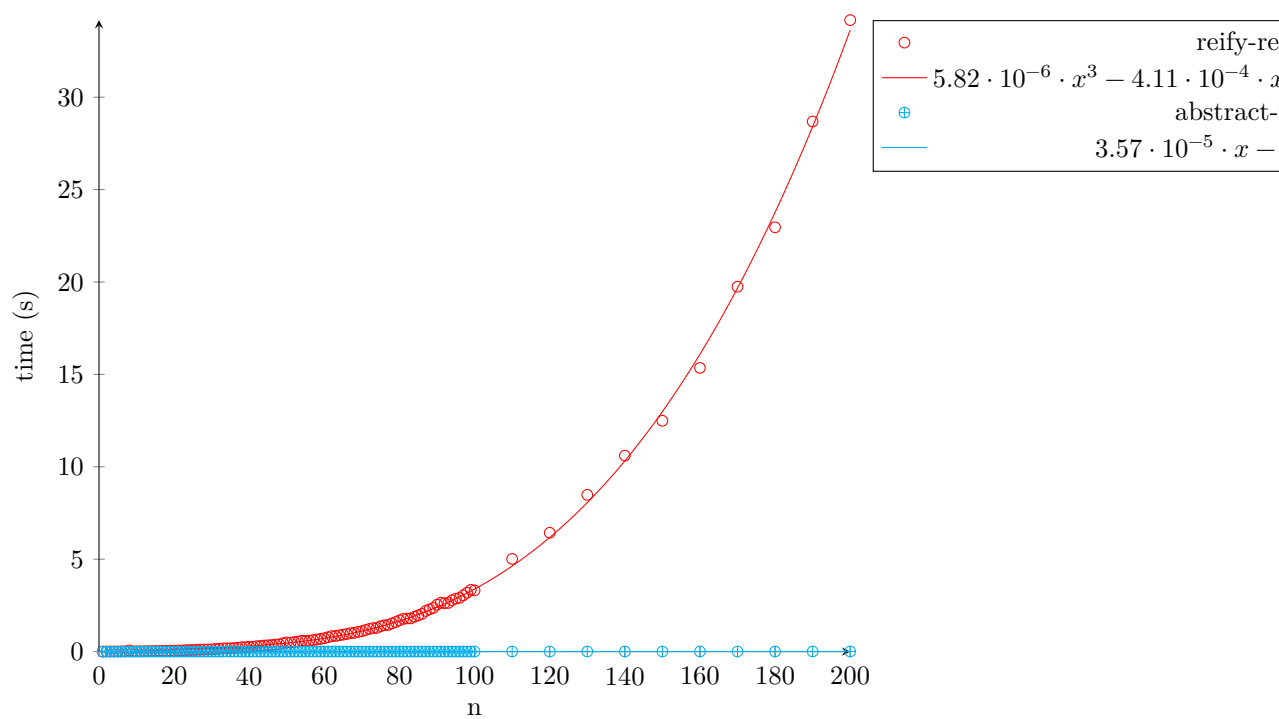Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

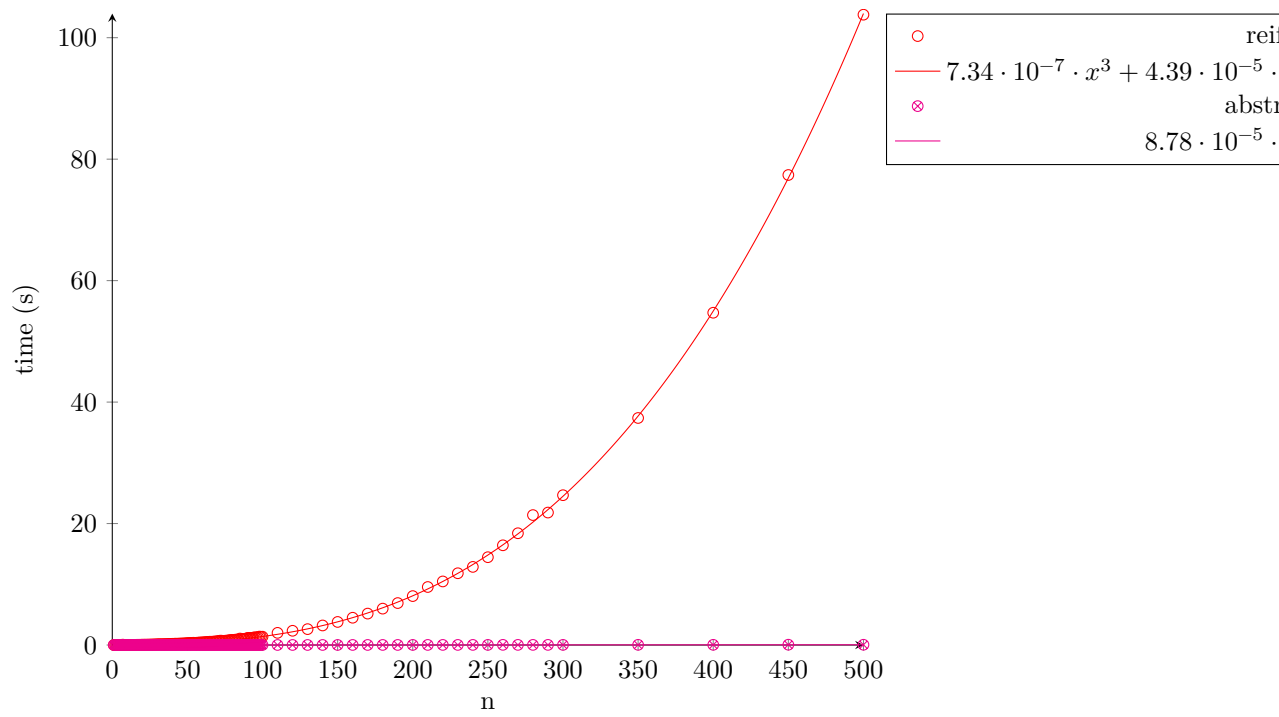Figure 13: timing-typeclass-reification-let-in-HOAS

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

time (s)

20

18

16

14

12

10

8

6

4

2

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

n

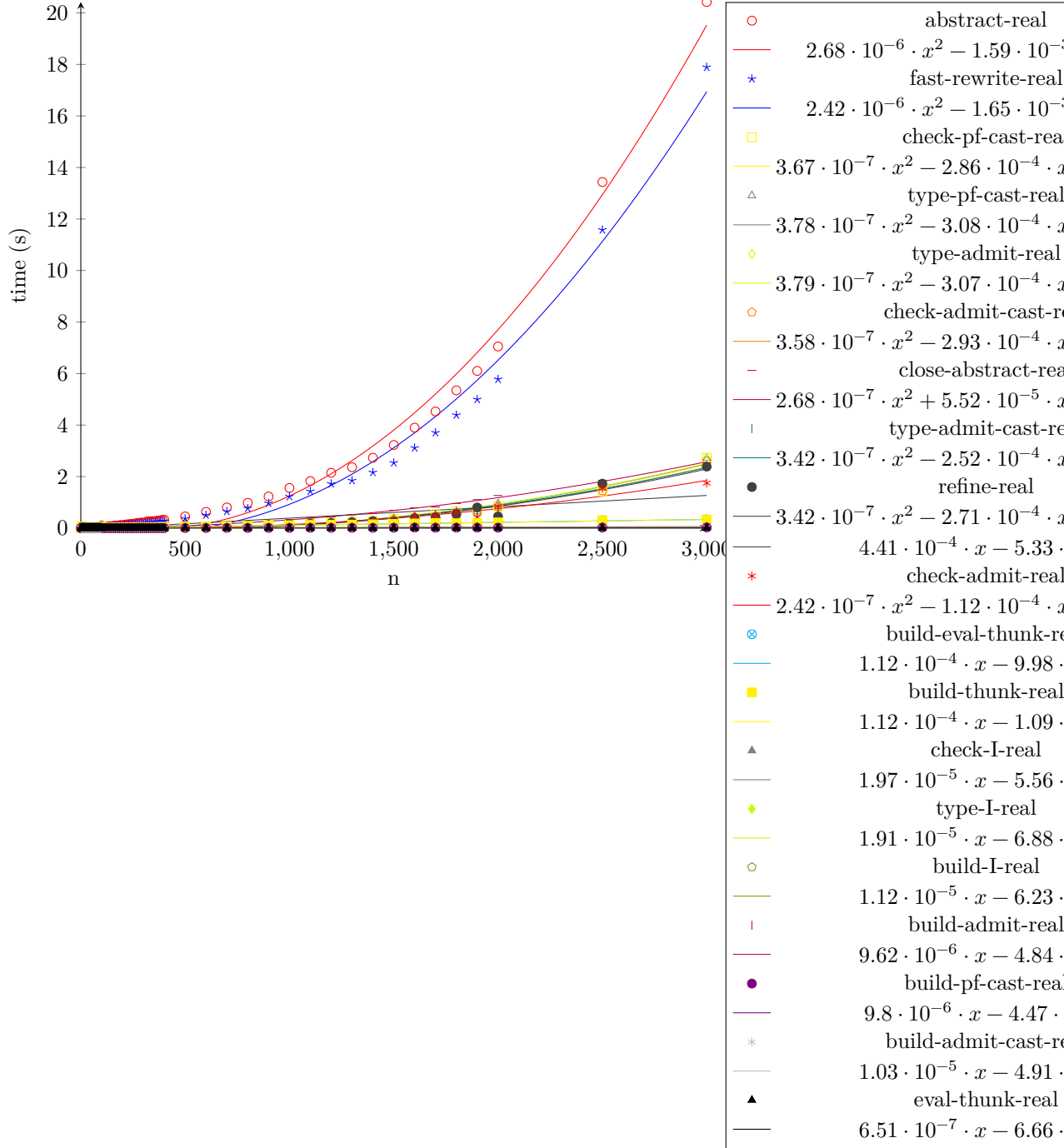|	
○	abstract-real
—	$2.68 \cdot 10^{-6} \cdot x^2 - 1.59 \cdot 10^{-3}$
∗	fast-rewrite-real
—	$2.42 \cdot 10^{-6} \cdot x^2 - 1.65 \cdot 10^{-3}$
□	check-pf-cast-real
—	$3.67 \cdot 10^{-7} \cdot x^2 - 2.86 \cdot 10^{-4} \cdot x$
△	type-pf-cast-real
—	$3.78 \cdot 10^{-7} \cdot x^2 - 3.08 \cdot 10^{-4} \cdot x$
◇	type-admit-real
—	$3.79 \cdot 10^{-7} \cdot x^2 - 3.07 \cdot 10^{-4} \cdot x$
⬠	check-admit-cast-real
—	$3.58 \cdot 10^{-7} \cdot x^2 - 2.93 \cdot 10^{-4} \cdot x$
–	close-abstract-real
—	$2.68 \cdot 10^{-7} \cdot x^2 + 5.52 \cdot 10^{-5} \cdot x$
∣	type-admit-cast-real
—	$3.42 \cdot 10^{-7} \cdot x^2 - 2.52 \cdot 10^{-4} \cdot x$
●	refine-real
—	$3.42 \cdot 10^{-7} \cdot x^2 - 2.71 \cdot 10^{-4} \cdot x$
—	$4.41 \cdot 10^{-4} \cdot x - 5.33$
∗	check-admit-real
—	$2.42 \cdot 10^{-7} \cdot x^2 - 1.12 \cdot 10^{-4} \cdot x$
⊗	build-eval-thunk-real
—	$1.12 \cdot 10^{-4} \cdot x - 9.98$
■	build-thunk-real
—	$1.12 \cdot 10^{-4} \cdot x - 1.09$
▲	check-I-real
—	$1.97 \cdot 10^{-5} \cdot x - 5.56$
♦	type-I-real
—	$1.91 \cdot 10^{-5} \cdot x - 6.88$
⬠	build-I-real
—	$1.12 \cdot 10^{-5} \cdot x - 6.23$
∣	build-admit-real
—	$9.62 \cdot 10^{-6} \cdot x - 4.84$
●	build-pf-cast-real
—	$9.8 \cdot 10^{-6} \cdot x - 4.47$
∗	build-admit-cast-real
—	$1.03 \cdot 10^{-5} \cdot x - 4.91$
▲	eval-thunk-real
—	$6.51 \cdot 10^{-7} \cdot x - 6.66$

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