

A NATURAL LANGUAGE DESCRIPTION FOR HACKER’S DELIGHT

Benchmark	Natural Language Description
hd-01	NO DESCRIPTION
hd-02	Turn off all trailing ones
hd-03	Isolate the right most one bit
hd-04	Form a bit mask that identifies the rightmost one bit and trailing zeros
hd-05	Right propagate the rightmost one bit
hd-06	NO DESCRIPTION
hd-07	Isolate the rightmost 0 bit
hd-08	Form a mask that identifies the trailing zeros
hd-14	Floor of average of two integers
hd-15	Ceiling of average of two integers
hd-17	Turn off the rightmost string of contiguous ones
hd-19	Exchanges 2 fields a and b of the same register x where m is the mask that identifies field b and $m \ll k$ is the mask that identifies field a
hd-20	Next higher unsigned number with the same number of 1 bits
hd-21	Cycling through 3 values a, b, c, x is the the first value, please gives the second value
hd-22	Compute parity
hd-23	Counting number of set bits.
hd-24	Round up to the next higher power of 2.
hd-25	Compute higher order half of product of x and y.
hd-26	Round up x to a multiple of k-th power of 2

B FULL EXPERIMENTAL RESULT

B.1 Hacker’s Delight

Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
	Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
hd-01	10.6	5	1.1	5	0.2	6	0.1	5	0.0	5
hd-02	5.3	5	1.9	5	0.3	5	0.1	5	0.0	5
hd-03	8.7	4	0.9	4	0.2	4	0.1	4	0.0	10
hd-04	2.6	5	1.1	5	0.1	5	0.1	5	0.0	5
hd-05	7.2	5	1.0	5	0.3	5	0.1	5	0.0	5
hd-06	7.7	5	1.0	5	0.2	7	0.2	5	0.1	5
hd-07	15.6	7	1.0	6	0.3	6	0.1	6	0.1	6
hd-08	425.6	7	1.5	5	0.3	6	0.2	6	0.1	6
hd-09	TO		9.4	9	6.1	10	0.4	10	0.0	10
hd-13	TO		2.0	8	3.3	27	0.3	8	0.2	12
hd-14	108.8	8	19.3	9	1.3	8	0.4	10	0.0	7
hd-15	TO		171.4	9	206.8	12	TO		0.1	12
hd-17	TO		1.3	8	251.9	12	154.7	13	0.1	8
hd-19	TO		TO		TO		TO		27.1	19
hd-20	TO		TO		TO		375.5	15	58.5	15
hd-21	TO		TO		0.3	11	0.3	11	61.2	15

Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
	Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
hd-22	TO		TO		TO		TO		83.2	127
hd-23	TO		TO		TO		TO		84.0	249
hd-24	TO		TO		TO		TO		44.6	191
hd-25	TO		TO		TO		TO		162.2	45
hd-26	TO		19.1	9	TO		TO		2.2	11

B.2 Case-splitting

Benchmark	CVC4		DUET		SIMBA		BITEN	
	Time	Size	Time	Size	Time	Size	Time	Size
PRE-100-10	0.0	14	0.0	15	0.0	15	0.0	17
PRE-100-100	0.1	14	0.0	15	0.0	15	0.0	17
PRE-100-1000	0.5	14	0.2	15	0.1	15	0.0	17
PRE-101-10	0.1	25	10.0	33	1.9	46	0.0	11
PRE-101-100	0.4	140	4.1	54	1.5	93	0.0	143
PRE-101-1000	3.3	31	59.9	197	30.1	176	0.0	803
PRE-102-10	0.1	60	1.1	20	0.5	102	0.1	22
PRE-102-100	0.4	174	1.4	20	0.6	20	0.0	22
PRE-102-1000	3.4	14	9.8	20	0.5	20	0.0	22
PRE-103-10	0.1	57	2.3	75	0.5	51	0.0	49
PRE-103-100	0.4	29	1.6	39	2.6	170	0.0	37
PRE-103-1000	3.1	87	72.7	40	6.0	110	0.0	37
PRE-104-10	0.0	15	0.0	19	0.0	19	0.0	21
PRE-104-100	0.1	14	0.2	19	0.0	20	0.0	21
PRE-104-1000	0.5	20	5.5	19	0.1	20	0.0	21
PRE-105-10	0.0	10	0.0	13	0.0	13	0.0	13
PRE-105-100	0.1	10	0.1	13	0.0	13	0.0	19
PRE-105-1000	0.5	10	4.0	13	0.1	13	0.0	19
PRE-106-10	0.1	14	2.5	49	0.7	32	0.0	16
PRE-106-100	0.4	14	1.8	35	0.5	18	0.0	21
PRE-106-1000	3.1	14	29.0	35	0.6	18	0.0	21
PRE-107-10	0.1	32	0.1	28	0.2	50	0.0	33
PRE-107-100	0.3	55	0.2	29	1.7	46	0.0	33
PRE-107-1000	2.6	32	0.8	28	2.0	78	0.0	33
PRE-108-10	0.2	73	0.1	73	0.1	60	0.0	45
PRE-108-100	0.8	184	0.3	81	0.4	143	0.0	227
PRE-108-1000	6.8	126	10.1	81	0.3	82	0.1	797
PRE-109-10	6.0	87	46.9	23	4.1	30	0.0	23
PRE-109-100	56.9	626	71.6	24	3.2	30	0.0	23
PRE-109-1000	TO		111.6	23	4.2	30	0.0	23
PRE-10-10	0.1	14	2.3	45	0.3	89	0.0	16
PRE-10-100	0.4	14	3.3	35	0.9	18	0.0	21
PRE-10-1000	3.0	14	25.9	35	0.7	18	0.0	21
PRE-110-10	0.1	83	2.4	102	0.6	119	0.0	51
PRE-110-100	0.7	499	1.7	35	6.4	224	0.0	51

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Benchmark	CVC4		DUET		SIMBA		BITEN	
	Time	Size	Time	Size	Time	Size	Time	Size
PRE-110-1000	17.3	2387	21.9	35	1.5	81	0.0	51
PRE-111-10	0.1	10	0.0	13	0.1	18	0.0	23
PRE-111-100	0.2	10	0.1	13	0.1	18	0.0	23
PRE-111-1000	1.4	24	0.7	13	0.1	18	0.0	23
PRE-112-10	0.0	4	0.0	5	0.0	5	0.0	5
PRE-112-100	0.1	4	0.0	5	0.0	5	0.0	5
PRE-112-1000	0.4	4	0.1	5	0.1	5	0.0	5
PRE-113-10	0.0	10	0.0	13	0.0	13	0.0	15
PRE-113-100	0.1	10	0.0	13	0.0	13	0.0	15
PRE-113-1000	0.4	10	0.3	13	0.1	13	0.0	15
PRE-114-10	0.1	49	0.4	19	0.1	23	0.0	25
PRE-114-100	0.6	19	0.7	19	0.1	23	0.0	25
PRE-114-1000	6.4	66	8.3	20	0.1	24	0.0	25
PRE-115-10	0.0	10	0.0	13	0.0	13	0.0	15
PRE-115-100	0.1	10	0.0	13	0.0	13	0.0	15
PRE-115-1000	0.6	11	0.2	13	0.1	13	0.0	15
PRE-116-10	0.1	35	0.1	29	0.0	30	0.0	33
PRE-116-100	0.2	19	0.3	30	0.1	30	0.0	47
PRE-116-1000	1.1	70	4.1	29	0.1	30	0.0	47
PRE-117-10	0.0	18	0.0	15	0.0	23	0.0	15
PRE-117-100	0.1	11	0.1	15	0.1	15	0.0	37
PRE-117-1000	0.4	11	2.2	15	0.1	15	0.0	37
PRE-118-10	0.1	63	0.1	41	0.1	40	0.0	31
PRE-118-100	0.2	29	0.1	39	0.7	40	0.0	45
PRE-118-1000	1.4	28	3.4	42	0.3	42	0.0	45
PRE-119-10	0.1	33	0.0	18	0.1	44	0.0	18
PRE-119-100	0.3	14	0.1	18	0.0	19	0.0	18
PRE-119-1000	2.3	14	3.1	18	0.2	121	0.0	18
PRE-11-10	0.0	8	0.0	10	0.0	10	0.0	12
PRE-11-100	0.0	8	0.0	10	0.0	10	0.0	12
PRE-11-1000	0.2	8	0.8	10	0.1	10	0.0	12
PRE-120-10	0.0	1	0.0	1	0.0	1	0.0	1
PRE-120-100	0.0	1	0.0	1	0.0	1	0.0	1
PRE-120-1000	0.1	1	0.1	1	0.1	1	0.0	1
PRE-121-10	6.1	40	4.5	54	1.7	65	0.1	36
PRE-121-100	70.8	418	5.7	517	67.1	901	0.0	27
PRE-121-1000	TO		255.2	39	TO		0.0	27
PRE-122-10	0.1	12	0.0	15	0.0	17	0.0	17
PRE-122-100	0.3	11	0.1	15	0.0	17	0.0	17
PRE-122-1000	2.4	12	0.8	15	0.1	17	0.0	17
PRE-123-10	0.1	9	0.0	13	0.1	14	0.0	15
PRE-123-100	0.2	10	0.1	13	0.1	14	0.0	15
PRE-123-1000	1.2	9	1.0	13	0.1	14	0.0	15
PRE-124-10	0.1	43	2.1	89	0.4	55	0.0	17
PRE-124-100	0.5	376	3.1	40	1.0	18	0.0	16
PRE-124-1000	4.3	102	31.9	40	0.7	18	0.0	16

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1471	PRE-125-10	0.1	13	1.2	69	0.5	17	0.0	15
1472	PRE-125-100	0.4	13	3.1	35	0.4	30	0.0	24
1473	PRE-125-1000	3.0	13	34.8	17	0.9	17	0.0	24
1474	PRE-126-10	0.1	49	2.3	67	0.5	68	0.0	36
1475	PRE-126-100	0.4	215	3.5	35	2.9	131	0.0	34
1476	PRE-126-1000	5.0	787	36.6	35	19.8	312	0.0	34
1477	PRE-127-10	0.0	21	0.1	31	0.0	13	0.0	13
1478	PRE-127-100	0.1	27	0.1	13	0.0	13	0.0	13
1479	PRE-127-1000	0.5	21	2.6	13	0.1	13	0.0	13
1480	PRE-128-10	98.4	101	TO		143.8	69	0.2	31
1481	PRE-128-100	TO		TO		149.6	33	0.3	31
1482	PRE-128-1000	TO		TO		209.1	51	0.2	31
1483	PRE-129-10	0.0	4	0.0	5	0.0	5	0.0	5
1484	PRE-129-100	0.1	4	0.0	5	0.0	5	0.0	5
1485	PRE-129-1000	0.4	4	0.1	5	0.1	5	0.0	5
1486	PRE-12-10	0.1	15	0.1	32	0.1	38	0.0	27
1487	PRE-12-100	0.6	27	0.1	31	0.5	169	0.0	27
1488	PRE-12-1000	7.6	835	2.0	31	0.3	24	0.0	27
1489	PRE-130-10	0.1	52	0.1	43	0.2	39	0.0	41
1490	PRE-130-100	0.4	32	0.1	43	0.2	40	0.0	41
1491	PRE-130-1000	3.0	31	3.6	44	0.3	40	0.0	41
1492	PRE-131-10	0.1	37	0.0	16	0.1	37	0.0	22
1493	PRE-131-100	0.1	12	0.1	16	0.2	16	0.0	22
1494	PRE-131-1000	1.0	12	1.3	16	0.1	16	0.0	22
1495	PRE-132-10	0.1	12	3.4	50	0.5	29	0.0	14
1496	PRE-132-100	0.4	12	1.5	37	0.7	16	0.0	16
1497	PRE-132-1000	3.1	12	22.3	16	0.7	16	0.0	16
1498	PRE-133-10	0.0	14	0.0	17	0.0	26	0.0	19
1499	PRE-133-100	0.1	19	0.1	19	0.1	20	0.0	21
1500	PRE-133-1000	0.7	16	5.7	19	0.1	20	0.0	21
1501	PRE-134-10	0.4	33	1.3	56	0.4	45	0.0	31
1502	PRE-134-100	1.7	170	1.7	35	1.5	116	0.0	52
1503	PRE-134-1000	17.0	288	22.3	35	1.0	116	0.0	91
1504	PRE-135-10	0.1	12	0.0	15	0.1	15	0.0	17
1505	PRE-135-100	0.3	13	0.1	15	0.3	15	0.0	17
1506	PRE-135-1000	2.2	13	0.8	15	0.4	15	0.0	17
1507	PRE-136-10	0.1	18	0.1	23	0.1	46	0.0	25
1508	PRE-136-100	0.2	24	0.1	23	0.0	37	0.0	25
1509	PRE-136-1000	1.7	18	2.4	23	0.1	64	0.0	25
1510	PRE-137-10	0.0	48	0.0	17	0.0	17	0.0	19
1511	PRE-137-100	0.1	13	0.0	17	0.0	17	0.0	19
1512	PRE-137-1000	0.6	13	0.3	17	0.1	17	0.0	19
1513	PRE-138-10	0.1	46	1.2	37	0.3	64	0.0	15
1514	PRE-138-100	0.4	279	1.3	17	0.3	17	0.0	15
1515	PRE-138-1000	3.0	12	12.6	17	0.6	17	0.0	15
1516	PRE-139-10	0.0	9	0.0	11	0.0	13	0.0	15
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	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1520	PRE-139-100	0.1	9	0.2	11	0.0	13	0.0	15
1521	PRE-139-1000	0.4	9	0.3	11	0.1	13	0.0	15
1522	PRE-13-10	0.1	24	1.2	37	0.4	39	0.0	11
1523	PRE-13-100	6.9	336	370.2	347	TO		0.0	19
1524	PRE-13-1000	106.7	2347	TO		TO		0.0	19
1525	PRE-140-10	0.1	68	1.2	72	0.5	60	0.0	36
1526	PRE-140-100	0.4	355	1.6	33	0.5	84	0.0	57
1527	PRE-140-1000	3.2	71	10.7	33	0.7	36	0.0	57
1528	PRE-141-10	16.9	49	1.2	59	0.5	94	1.6	31
1529	PRE-141-100	297.8	458	64.1	38	2.8	257	0.0	31
1530	PRE-141-1000	TO		TO		TO		0.1	31
1531	PRE-142-10	0.0	28	0.1	26	0.0	16	0.0	27
1532	PRE-142-100	0.1	19	0.1	26	0.0	16	0.0	27
1533	PRE-142-1000	0.6	20	2.0	25	0.1	16	0.0	27
1534	PRE-143-10	0.4	58	0.1	20	0.1	22	0.0	22
1535	PRE-143-100	1.7	206	0.2	22	2.7	53	0.0	30
1536	PRE-143-1000	16.0	63	4.4	22	0.6	53	0.0	30
1537	PRE-144-10	0.4	63	0.1	43	0.0	43	0.0	30
1538	PRE-144-100	1.9	487	1.3	31	1.4	65	0.0	34
1539	PRE-144-1000	17.1	133	11.9	31	1.4	65	0.0	34
1540	PRE-145-10	0.1	23	2.1	23	0.3	24	0.0	23
1541	PRE-145-100	0.4	143	1.7	27	0.4	42	0.0	57
1542	PRE-145-1000	7.3	1288	10.3	27	0.9	28	0.0	57
1543	PRE-146-10	0.1	38	1.2	31	0.2	47	0.0	13
1544	PRE-146-100	0.5	366	5.7	392	10.9	493	0.0	45
1545	PRE-146-1000	98.7	2766	TO		TO		0.0	29
1546	PRE-147-10	0.1	37	0.0	13	0.0	16	0.0	18
1547	PRE-147-100	0.3	12	0.1	13	0.0	16	0.0	18
1548	PRE-147-1000	2.1	12	0.7	13	0.1	16	0.0	18
1549	PRE-148-10	0.1	41	0.1	117	0.4	125	0.1	29
1550	PRE-148-100	0.2	33	0.2	49	1.1	229	0.0	285
1551	PRE-148-1000	2.1	33	2.9	49	1.0	199	0.0	57
1552	PRE-149-10	0.1	10	0.0	14	0.0	16	0.0	18
1553	PRE-149-100	0.2	10	0.1	14	0.0	16	0.0	18
1554	PRE-149-1000	1.3	11	0.6	14	0.1	16	0.0	18
1555	PRE-14-10	0.1	27	1.2	22	0.5	65	0.0	20
1556	PRE-14-100	0.4	220	3.4	478	5.8	200	0.0	343
1557	PRE-14-1000	3.2	37	43.0	2652	163.1	743	0.0	47
1558	PRE-150-10	0.0	60	0.1	42	0.1	42	0.0	30
1559	PRE-150-100	0.4	212	6.5	335	2.3	103	0.0	68
1560	PRE-150-1000	3.3	47	44.4	75	9.7	98	0.0	68
1561	PRE-15-10	0.1	36	1.2	64	0.4	57	0.0	21
1562	PRE-15-100	0.4	83	3.7	33	0.8	16	0.0	21
1563	PRE-15-1000	3.3	11	52.7	33	1.0	16	0.0	21
1564	PRE-16-10	0.1	40	0.1	18	0.1	35	0.0	21
1565	PRE-16-100	0.2	14	0.2	18	0.1	65	0.0	21
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	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1569	PRE-16-1000	1.5	14	2.4	18	0.2	63	0.0	31
1570	PRE-17-10	0.0	9	0.0	12	0.0	14	0.0	14
1571	PRE-17-100	0.0	9	0.0	12	0.0	14	0.0	15
1572	PRE-17-1000	0.2	9	0.6	12	0.1	14	0.0	15
1573	PRE-18-10	0.1	39	0.0	35	0.1	43	0.0	29
1574	PRE-18-100	0.7	126	0.2	36	0.1	34	0.0	43
1575	PRE-18-1000	7.5	96	2.2	33	0.1	33	0.0	43
1576	PRE-19-10	0.0	12	0.0	13	0.0	13	0.0	15
1577	PRE-19-100	0.1	14	0.2	15	0.0	15	0.0	17
1578	PRE-19-1000	0.5	14	1.3	15	0.1	15	0.0	17
1579	PRE-1-10	0.1	12	0.0	15	0.0	17	0.0	21
1580	PRE-1-100	0.3	12	0.1	15	0.0	17	0.0	21
1581	PRE-1-1000	2.4	11	1.2	15	0.1	17	0.0	21
1582	PRE-20-10	0.0	33	0.0	27	0.1	32	0.0	24
1583	PRE-20-100	0.5	96	3.4	61	0.5	20	0.0	37
1584	PRE-20-1000	6.9	646	35.9	31	0.6	20	0.0	37
1585	PRE-21-10	0.0	36	0.1	38	0.0	26	0.0	29
1586	PRE-21-100	0.1	27	0.2	37	0.1	26	0.0	31
1587	PRE-21-1000	0.5	61	6.7	25	0.1	25	0.0	29
1588	PRE-22-10	0.1	28	0.5	14	0.0	14	0.0	17
1589	PRE-22-100	0.6	11	0.6	13	0.0	14	0.0	17
1590	PRE-22-1000	5.9	89	7.4	14	0.1	14	0.0	17
1591	PRE-23-10	0.1	11	0.0	14	0.0	15	0.0	16
1592	PRE-23-100	0.3	22	0.1	26	0.2	137	0.0	30
1593	PRE-23-1000	2.4	30	1.2	27	0.1	30	0.0	30
1594	PRE-24-10	0.1	46	2.2	51	0.4	65	0.0	21
1595	PRE-24-100	0.4	245	1.8	328	9.6	381	0.0	49
1596	PRE-24-1000	85.2	2907	TO		TO		0.0	49
1597	PRE-25-10	0.0	18	0.1	24	0.0	24	0.0	25
1598	PRE-25-100	0.4	20	1.5	25	0.6	26	0.0	25
1599	PRE-25-1000	3.6	230	13.7	25	0.5	26	0.0	25
1600	PRE-26-10	0.1	14	0.1	19	0.0	21	0.1	23
1601	PRE-26-100	0.3	14	0.1	19	0.0	21	0.0	23
1602	PRE-26-1000	2.1	14	0.8	19	0.1	21	0.0	23
1603	PRE-27-10	0.0	5	0.0	7	0.0	7	0.0	5
1604	PRE-27-100	0.4	248	1.9	199	2.1	240	0.0	111
1605	PRE-27-1000	97.2	3117	TO		TO		0.0	169
1606	PRE-28-10	0.0	2	0.0	3	0.0	3	0.0	3
1607	PRE-28-100	0.0	2	0.0	3	0.0	3	0.0	3
1608	PRE-28-1000	0.2	2	0.1	3	0.1	3	0.0	3
1609	PRE-29-10	0.0	28	0.1	24	0.0	25	0.0	30
1610	PRE-29-100	0.1	20	0.2	24	0.1	25	0.0	30
1611	PRE-29-1000	0.5	19	4.2	24	0.1	25	0.0	30
1612	PRE-2-10	0.4	66	3.7	66	0.5	99	0.1	27
1613	PRE-2-100	1.8	639	3.1	887	22.8	1026	0.1	29
1614	PRE-2-1000	60.3	15	544.6	23	TO		0.1	29
1615									
1616									
1617									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1618	PRE-30-10	0.4	14	0.1	18	0.1	18	0.0	44
1619	PRE-30-100	1.7	60	0.2	18	0.7	18	0.0	50
1620	PRE-30-1000	16.0	37	4.0	18	0.6	18	0.0	44
1621	PRE-31-10	0.0	37	0.0	16	0.0	16	0.0	17
1622	PRE-31-100	0.1	12	0.1	16	0.0	16	0.0	17
1623	PRE-31-1000	0.7	12	3.5	16	0.1	16	0.0	17
1624	PRE-32-10	0.1	14	0.0	16	0.0	18	0.0	19
1625	PRE-32-100	0.2	13	0.1	16	0.0	19	0.0	22
1626	PRE-32-1000	1.5	14	0.4	16	0.1	18	0.0	22
1627	PRE-33-10	0.0	8	0.1	28	0.0	9	0.0	11
1628	PRE-33-100	0.1	8	0.2	11	0.0	9	0.0	11
1629	PRE-33-1000	0.4	8	3.2	11	0.1	9	0.0	11
1630	PRE-34-10	0.0	28	0.0	24	0.0	24	0.0	25
1631	PRE-34-100	0.1	20	0.2	23	0.1	24	0.0	25
1632	PRE-34-1000	1.1	46	4.2	23	0.1	24	0.0	25
1633	PRE-35-10	0.0	20	0.1	35	0.0	28	0.0	19
1634	PRE-35-100	0.5	277	3.3	63	11.0	386	0.0	27
1635	PRE-35-1000	4.0	127	102.4	61	39.5	148	0.0	27
1636	PRE-36-10	0.4	16	0.2	35	0.1	41	0.0	34
1637	PRE-36-100	1.6	24	0.4	35	0.1	61	0.0	75
1638	PRE-36-1000	15.2	16	9.1	35	0.2	41	0.0	75
1639	PRE-37-10	0.1	51	0.1	21	0.0	23	0.0	21
1640	PRE-37-100	0.3	14	0.1	21	0.1	23	0.0	23
1641	PRE-37-1000	2.0	14	1.1	21	0.8	170	0.0	23
1642	PRE-38-10	0.0	34	0.1	23	0.1	24	0.0	17
1643	PRE-38-100	0.1	26	0.1	33	0.1	31	0.0	35
1644	PRE-38-1000	0.5	26	3.9	33	0.1	33	0.0	35
1645	PRE-39-10	0.0	21	0.0	24	0.0	15	0.0	15
1646	PRE-39-100	0.1	28	0.1	15	0.1	15	0.0	15
1647	PRE-39-1000	0.6	21	5.7	15	0.1	15	0.0	15
1648	PRE-3-10	0.0	9	0.0	6	0.0	6	0.0	6
1649	PRE-3-100	0.1	19	0.5	11	0.0	11	0.0	13
1650	PRE-3-1000	0.5	19	19.1	11	0.1	11	0.0	13
1651	PRE-40-10	0.1	76	2.3	86	0.4	94	0.0	21
1652	PRE-40-100	8.2	609	412.7	55	TO		0.0	33
1653	PRE-40-1000	159.6	5770	557.6	49	TO		0.0	33
1654	PRE-41-10	0.0	13	0.0	15	0.0	15	0.0	17
1655	PRE-41-100	0.1	13	0.1	15	0.0	15	0.0	17
1656	PRE-41-1000	0.6	13	4.0	15	0.1	15	0.0	17
1657	PRE-42-10	0.0	10	0.0	13	0.0	15	0.0	17
1658	PRE-42-100	0.1	10	0.0	13	0.0	15	0.0	17
1659	PRE-42-1000	0.4	10	0.3	13	0.1	15	0.0	17
1660	PRE-43-10	0.1	23	0.1	28	0.1	45	0.0	32
1661	PRE-43-100	0.3	22	0.1	29	0.1	111	0.0	30
1662	PRE-43-1000	2.3	23	2.1	28	0.2	84	0.0	30
1663	PRE-44-10	0.0	2	0.0	3	0.0	3	0.0	3
1664									
1665									
1666									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1667	PRE-44-100	0.0	2	0.0	3	0.0	3	0.0	3
1668	PRE-44-1000	0.2	2	0.1	3	0.1	3	0.0	3
1669	PRE-45-10	0.0	8	0.0	10	0.0	10	0.0	12
1670	PRE-45-100	0.0	8	0.0	10	0.0	10	0.0	17
1671	PRE-45-1000	0.2	8	0.6	10	0.1	10	0.0	17
1672	PRE-46-10	0.1	9	0.0	13	0.1	14	0.0	15
1673	PRE-46-100	0.2	10	0.1	13	0.1	14	0.0	15
1674	PRE-46-1000	1.3	9	1.0	13	0.1	14	0.0	15
1675	PRE-47-10	0.1	89	1.1	90	0.2	35	0.0	20
1676	PRE-47-100	0.7	500	1.6	21	1.1	21	0.0	24
1677	PRE-47-1000	22.8	2299	29.0	21	0.5	21	0.0	24
1678	PRE-48-10	0.1	21	0.1	28	0.0	34	0.0	35
1679	PRE-48-100	0.7	120	0.1	27	0.1	26	0.0	35
1680	PRE-48-1000	7.0	52	2.3	28	0.1	26	0.0	35
1681	PRE-49-10	0.0	10	0.0	13	0.0	15	0.0	17
1682	PRE-49-100	0.1	10	0.0	13	0.0	15	0.0	17
1683	PRE-49-1000	0.4	10	0.2	13	0.1	15	0.0	17
1684	PRE-4-10	0.0	7	0.0	8	0.0	8	0.0	13
1685	PRE-4-100	0.0	7	0.1	8	0.0	8	0.0	13
1686	PRE-4-1000	0.2	7	0.6	8	0.1	8	0.0	13
1687	PRE-50-10	0.1	34	2.2	43	0.5	81	0.0	19
1688	PRE-50-100	0.4	136	1.5	19	0.5	19	0.0	19
1689	PRE-50-1000	2.9	14	31.7	19	0.6	19	0.0	19
1690	PRE-51-10	0.0	21	0.0	12	0.0	12	0.0	14
1691	PRE-51-100	0.1	21	0.1	12	0.0	12	0.0	14
1692	PRE-51-1000	0.5	27	3.7	12	0.1	12	0.0	14
1693	PRE-52-10	0.0	17	0.1	14	0.0	11	0.0	13
1694	PRE-52-100	0.1	17	1.0	11	0.0	11	0.0	21
1695	PRE-52-1000	0.5	17	18.8	11	0.1	11	0.0	21
1696	PRE-53-10	0.0	33	0.0	15	0.0	13	0.0	15
1697	PRE-53-100	0.1	11	0.0	15	0.0	13	0.0	21
1698	PRE-53-1000	0.5	10	0.4	15	0.1	13	0.0	21
1699	PRE-54-10	0.1	11	0.0	14	0.1	15	0.0	16
1700	PRE-54-100	0.2	10	0.1	14	0.0	15	0.0	16
1701	PRE-54-1000	1.2	10	1.0	14	0.1	15	0.0	16
1702	PRE-55-10	0.0	8	0.0	11	0.0	11	0.0	13
1703	PRE-55-100	0.0	8	0.0	11	0.0	11	0.0	13
1704	PRE-55-1000	0.2	8	0.9	11	0.1	11	0.0	13
1705	PRE-56-10	0.1	20	0.0	38	0.0	26	0.0	27
1706	PRE-56-100	0.4	161	2.9	63	1.7	233	0.0	59
1707	PRE-56-1000	4.3	78	36.2	92	1.6	95	0.0	59
1708	PRE-57-10	0.1	23	1.2	49	0.3	40	0.0	19
1709	PRE-57-100	0.4	169	3.3	237	2.8	321	0.0	19
1710	PRE-57-1000	97.4	1828	TO		TO		0.0	19
1711	PRE-58-10	0.1	53	0.1	61	0.1	88	0.0	39
1712	PRE-58-100	0.4	226	4.9	614	10.3	595	0.0	211
1713									
1714									
1715									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1716	PRE-58-1000	3.6	506	56.5	3236	410.1	1596	0.0	199
1717	PRE-59-10	0.1	18	0.0	18	0.1	35	0.0	18
1718	PRE-59-100	0.4	15	0.3	39	0.2	83	0.0	25
1719	PRE-59-1000	3.0	14	3.0	18	0.2	60	0.0	25
1720	PRE-5-10	0.0	17	0.1	28	0.0	28	0.0	22
1721	PRE-5-100	0.1	23	0.2	28	0.1	63	0.0	22
1722	PRE-5-1000	0.5	22	1.7	21	0.1	29	0.0	22
1723	PRE-60-10	0.1	56	2.2	64	0.4	55	0.0	15
1724	PRE-60-100	0.4	55	3.0	39	0.6	17	0.0	15
1725	PRE-60-1000	2.9	12	9.9	17	0.6	17	0.0	15
1726	PRE-61-10	0.1	40	0.0	38	0.1	37	0.0	21
1727	PRE-61-100	0.2	27	0.2	35	1.0	94	0.0	295
1728	PRE-61-1000	1.3	26	2.1	38	0.5	83	0.0	1797
1729	PRE-62-10	0.1	30	0.1	18	0.1	18	0.0	28
1730	PRE-62-100	0.3	46	0.3	18	0.1	18	0.0	24
1731	PRE-62-1000	2.1	45	19.7	18	0.3	18	0.0	58
1732	PRE-63-10	0.0	34	0.1	31	0.0	15	0.0	22
1733	PRE-63-100	0.1	12	0.2	15	0.1	15	0.0	22
1734	PRE-63-1000	0.5	12	2.7	15	0.1	15	0.0	22
1735	PRE-64-10	0.1	19	0.0	25	0.0	34	0.0	26
1736	PRE-64-100	0.2	29	0.2	64	0.1	66	0.0	26
1737	PRE-64-1000	1.7	29	4.5	25	0.2	66	0.0	26
1738	PRE-65-10	0.1	66	0.1	26	0.1	54	0.0	24
1739	PRE-65-100	0.6	63	0.3	26	0.1	31	0.0	24
1740	PRE-65-1000	6.7	106	2.3	27	0.1	32	0.0	24
1741	PRE-66-10	0.0	26	0.1	23	0.0	23	0.0	27
1742	PRE-66-100	0.8	183	0.1	22	0.0	18	0.0	24
1743	PRE-66-1000	7.6	43	2.0	22	0.1	18	0.0	24
1744	PRE-67-10	0.6	55	0.1	23	0.1	23	0.1	29
1745	PRE-67-100	3.4	95	0.1	23	0.0	23	0.1	27
1746	PRE-67-1000	30.6	56	0.8	23	0.1	23	0.1	27
1747	PRE-68-10	0.0	37	0.1	51	0.1	33	0.0	33
1748	PRE-68-100	0.1	23	0.2	111	0.1	33	0.0	213
1749	PRE-68-1000	0.4	23	8.6	111	0.1	33	0.0	33
1750	PRE-69-10	0.0	10	0.1	14	0.0	24	0.0	14
1751	PRE-69-100	0.1	10	0.1	14	0.0	14	0.0	16
1752	PRE-69-1000	0.4	10	2.2	14	0.1	14	0.0	16
1753	PRE-6-10	0.1	31	0.1	18	0.0	19	0.0	20
1754	PRE-6-100	0.3	13	0.1	18	0.1	19	0.0	20
1755	PRE-6-1000	2.5	13	1.1	18	0.1	19	0.0	20
1756	PRE-70-10	0.0	15	0.1	22	0.0	22	0.0	23
1757	PRE-70-100	0.1	15	0.1	22	0.0	22	0.0	23
1758	PRE-70-1000	0.4	15	5.1	22	0.1	22	0.0	23
1759	PRE-71-10	5.6	93	5.5	23	0.6	23	0.0	22
1760	PRE-71-100	57.7	419	65.7	18	0.8	23	0.0	22
1761	PRE-71-1000	TO		25.9	24	0.7	23	0.0	22
1762									
1763									
1764									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1765	PRE-72-10	0.1	13	0.0	17	0.0	17	0.0	19
1766	PRE-72-100	0.6	13	0.0	17	0.0	17	0.0	19
1767	PRE-72-1000	6.8	76	0.3	17	0.1	17	0.0	19
1768	PRE-72-10000	0.0	17	0.0	21	0.1	21	0.0	23
1769	PRE-73-10	0.1	17	0.1	21	0.0	21	0.0	23
1770	PRE-73-100	0.5	16	7.3	21	0.1	21	0.0	23
1771	PRE-73-1000	0.1	62	0.1	38	0.1	40	0.0	23
1772	PRE-74-10	0.2	28	0.1	38	0.1	69	0.0	31
1773	PRE-74-100	1.5	29	4.3	37	0.3	89	0.0	45
1774	PRE-74-1000	0.0	13	0.0	14	0.0	14	0.0	16
1775	PRE-75-10	0.1	13	0.0	14	0.0	14	0.0	16
1776	PRE-75-100	0.5	12	1.5	14	0.1	14	0.0	16
1777	PRE-75-1000	0.1	38	0.0	6	0.0	6	0.0	10
1778	PRE-76-10	0.2	13	0.2	6	0.0	6	0.0	17
1779	PRE-76-100	1.6	13	1.4	6	0.1	6	0.0	17
1780	PRE-76-1000	6.4	102	6.4	42	1.9	97	0.0	31
1781	PRE-77-10	61.4	702	21.2	529	67.2	917	0.0	31
1782	PRE-77-100	TO		298.9	45	TO		0.0	31
1783	PRE-77-1000	0.0	26	0.0	15	0.0	15	0.0	15
1784	PRE-78-10	0.1	11	0.1	15	0.0	15	0.0	15
1785	PRE-78-100	0.6	11	2.0	15	0.1	15	0.0	15
1786	PRE-78-1000	1.6	113	0.9	26	0.2	26	0.1	22
1787	PRE-79-10	18.3	449	0.9	28	0.2	26	0.1	22
1788	PRE-79-100	203.1	682	4.9	26	0.3	26	0.1	22
1789	PRE-79-1000	0.0	14	0.0	18	0.0	27	0.0	20
1790	PRE-7-10	0.4	215	1.6	20	0.6	32	0.0	20
1791	PRE-7-100	4.4	349	10.7	20	1.1	32	0.0	20
1792	PRE-7-1000	0.1	55	0.1	56	0.1	65	0.0	27
1793	PRE-80-10	0.4	16	1.4	20	0.8	20	0.0	18
1794	PRE-80-100	3.1	16	14.3	20	0.9	20	0.0	24
1795	PRE-80-1000	0.0	15	0.0	20	0.0	20	0.0	21
1796	PRE-81-10	0.1	49	0.3	47	0.1	27	0.0	49
1797	PRE-81-100	0.5	22	6.3	27	0.1	27	0.0	69
1798	PRE-81-1000	0.1	38	1.2	71	1.7	27	0.0	21
1799	PRE-82-10	0.4	12	1.6	17	0.7	17	0.0	21
1800	PRE-82-100	3.2	12	15.6	17	0.5	17	0.0	21
1801	PRE-82-1000	1.7	87	0.7	28	0.2	26	0.1	23
1802	PRE-83-10	18.1	175	0.8	28	0.2	26	0.1	23
1803	PRE-83-100	237.8	225	16.6	28	0.2	26	0.1	23
1804	PRE-83-1000	0.1	41	2.1	52	0.3	69	0.0	33
1805	PRE-84-10	0.6	560	5.0	228	1.7	148	0.0	318
1806	PRE-84-100	9.3	1177	63.2	407	3.2	202	0.0	43
1807	PRE-84-1000	0.0	9	0.0	13	0.0	13	0.0	15
1808	PRE-85-10	0.0	9	0.0	13	0.0	13	0.0	15
1809	PRE-85-100	0.3	9	0.2	13	0.1	13	0.0	15
1810	PRE-85-1000	0.1	40	0.1	19	0.0	20	0.0	20
1811	PRE-86-10								
1812									
1813									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1814	PRE-86-100	0.2	13	0.1	19	0.1	21	0.0	30
1815	PRE-86-1000	1.4	13	1.8	19	0.1	21	0.0	30
1816	PRE-87-10	0.0	18	0.0	23	0.0	23	0.0	25
1817	PRE-87-100	0.1	26	0.2	33	0.0	33	0.0	35
1818	PRE-87-1000	0.5	26	7.6	33	0.1	33	0.0	35
1819	PRE-88-10	0.2	61	0.1	31	0.0	17	0.0	33
1820	PRE-88-100	0.7	82	0.1	31	0.0	17	0.0	33
1821	PRE-88-1000	7.2	60	1.4	32	0.1	17	0.0	33
1822	PRE-89-10	0.1	49	1.2	55	0.5	68	0.0	12
1823	PRE-89-100	0.5	468	5.6	623	12.6	627	0.0	20
1824	PRE-89-1000	146.4	4239	TO		TO		0.0	20
1825	PRE-8-10	0.1	42	1.1	46	0.3	34	0.0	22
1826	PRE-8-100	0.4	16	1.4	22	0.7	55	0.0	22
1827	PRE-8-1000	3.2	38	33.1	22	0.4	59	0.0	22
1828	PRE-90-10	0.0	12	0.0	14	0.0	14	0.0	22
1829	PRE-90-100	0.1	12	0.1	14	0.0	14	0.0	29
1830	PRE-90-1000	0.4	12	4.6	14	0.1	14	0.0	29
1831	PRE-91-10	0.0	11	0.0	14	0.0	14	0.0	22
1832	PRE-91-100	0.1	11	0.1	14	0.0	14	0.0	22
1833	PRE-91-1000	0.4	11	3.2	14	0.1	14	0.0	22
1834	PRE-92-10	91.6	89	TO		199.2	44	0.1	37
1835	PRE-92-100	TO		TO		TO		0.1	37
1836	PRE-92-1000	TO		TO		TO		0.1	37
1837	PRE-93-10	0.1	36	0.0	29	0.2	39	0.0	30
1838	PRE-93-100	0.2	70	0.1	28	0.1	28	0.0	44
1839	PRE-93-1000	1.1	28	2.4	28	0.2	28	0.0	44
1840	PRE-94-10	0.0	22	0.0	14	0.0	14	0.0	21
1841	PRE-94-100	0.1	23	0.1	14	0.0	14	0.0	21
1842	PRE-94-1000	0.5	16	2.9	14	0.1	14	0.0	21
1843	PRE-95-10	0.0	7	0.0	8	0.0	8	0.0	12
1844	PRE-95-100	7.8	292	285.9	138	TO		0.0	20
1845	PRE-95-1000	78.1	1895	TO		54.7	152	0.0	20
1846	PRE-96-10	0.1	49	2.3	58	0.5	81	0.0	36
1847	PRE-96-100	0.6	300	1.6	37	1.0	21	0.0	53
1848	PRE-96-1000	3.4	17	57.2	37	0.4	21	0.0	53
1849	PRE-97-10	0.1	17	0.0	23	0.0	23	0.0	24
1850	PRE-97-100	0.2	14	0.1	18	0.1	123	0.0	24
1851	PRE-97-1000	86.0	126	184.9	43	6.7	161	0.0	69
1852	PRE-98-10	0.1	27	1.1	51	0.5	74	0.0	25
1853	PRE-98-100	0.5	534	3.7	715	13.2	852	0.0	25
1854	PRE-98-1000	106.1	3532	TO		TO		0.0	25
1855	PRE-99-10	0.1	18	0.1	37	0.1	23	0.0	23
1856	PRE-99-100	0.7	122	0.1	28	0.1	21	0.0	23
1857	PRE-99-1000	6.4	24	3.8	36	0.1	21	0.0	23
1858	PRE-9-10	1.2	85	0.2	36	0.1	32	0.1	33
1859	PRE-9-100	7.7	234	0.2	35	0.2	61	0.0	23
1860									
1861									
1862									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1863	PRE-9-1000	90.8	367	3.8	35	0.1	32	0.0	23
1864	PRE-icfp-gen-1.1	0.1	63	0.1	30	0.0	32	0.0	43
1865	PRE-icfp-gen-1.10	0.7	50	9.2	115	1.1	59	0.0	60
1866	PRE-icfp-gen-1.11	0.2	32	0.1	29	0.0	23	0.0	26
1867	PRE-icfp-gen-1.12	0.4	65	0.2	50	0.4	65	0.0	65
1868	PRE-icfp-gen-1.13	0.2	118	2.5	145	1.1	159	0.0	37
1869	PRE-icfp-gen-1.14	0.6	502	43.3	867	15.2	830	0.0	356
1870	PRE-icfp-gen-1.15	0.2	157	3.2	107	1.8	42	0.0	21
1871	PRE-icfp-gen-1.16	0.1	83	0.2	63	0.1	60	0.0	52
1872	PRE-icfp-gen-1.17	0.3	67	1.5	136	0.7	160	0.0	47
1873	PRE-icfp-gen-1.18	1.8	474	6.5	135	11.9	145	0.0	86
1874	PRE-icfp-gen-1.19	0.0	14	0.0	15	0.0	15	0.0	17
1875	PRE-icfp-gen-1.2	0.7	122	1.8	137	0.7	133	0.1	57
1876	PRE-icfp-gen-1.20	0.3	129	4.0	86	1.4	94	0.0	51
1877	PRE-icfp-gen-1.3	0.1	20	0.2	11	0.0	11	0.0	13
1878	PRE-icfp-gen-1.4	0.2	33	0.2	25	0.2	36	0.0	24
1879	PRE-icfp-gen-1.5	0.6	83	2.3	29	0.1	47	0.0	77
1880	PRE-icfp-gen-1.6	0.2	170	3.2	148	1.9	253	0.0	79
1881	PRE-icfp-gen-1.7	0.3	156	1.4	28	0.8	32	0.0	20
1882	PRE-icfp-gen-1.8	0.2	99	1.5	56	0.2	22	0.0	22
1883	PRE-icfp-gen-1.9	1.5	86	0.1	47	0.1	45	0.1	50
1884	PRE-icfp-gen-10.1	0.4	38	1.0	20	0.2	50	0.0	21
1885	PRE-icfp-gen-10.10	0.3	221	2.7	176	1.0	184	0.0	55
1886	PRE-icfp-gen-10.11	0.3	181	2.6	133	1.0	218	0.0	68
1887	PRE-icfp-gen-10.12	0.1	35	0.1	19	0.0	20	0.0	31
1888	PRE-icfp-gen-10.13	0.2	13	2.8	62	0.6	17	0.0	15
1889	PRE-icfp-gen-10.14	0.2	149	2.8	123	0.7	79	0.0	85
1890	PRE-icfp-gen-10.15	0.2	64	1.7	121	0.9	130	0.0	80
1891	PRE-icfp-gen-10.16	0.2	94	1.4	35	0.8	112	0.0	37
1892	PRE-icfp-gen-10.17	0.2	97	0.2	72	0.2	97	0.0	40
1893	PRE-icfp-gen-10.18	0.3	55	0.4	104	0.1	23	0.0	23
1894	PRE-icfp-gen-10.19	0.2	141	3.6	127	0.6	33	0.0	23
1895	PRE-icfp-gen-10.2	0.0	13	0.0	18	0.0	19	0.0	22
1896	PRE-icfp-gen-10.20	29.6	281	69.1	27	6.7	33	0.0	33
1897	PRE-icfp-gen-10.3	0.3	137	3.3	132	0.9	137	0.0	76
1898	PRE-icfp-gen-10.4	3.1	61	0.6	32	2.4	145	0.2	32
1899	PRE-icfp-gen-10.5	0.2	111	1.3	170	1.1	159	0.0	47
1900	PRE-icfp-gen-10.6	20.9	144	12.7	74	11.6	185	0.0	50
1901	PRE-icfp-gen-10.7	0.3	69	1.7	42	0.4	43	0.0	39
1902	PRE-icfp-gen-10.8	0.2	177	2.8	48	0.3	24	0.0	27
1903	PRE-icfp-gen-10.9	1.4	168	0.5	30	0.6	60	0.1	44
1904	PRE-icfp-gen-11.1	0.3	166	3.5	221	2.1	236	0.0	87
1905	PRE-icfp-gen-11.10	0.3	137	1.5	165	1.2	137	0.0	46
1906	PRE-icfp-gen-11.11	0.2	93	1.3	92	0.4	100	0.0	41
1907	PRE-icfp-gen-11.12	0.1	54	1.3	42	0.5	71	0.0	63
1908	PRE-icfp-gen-11.13	0.2	96	3.6	84	0.6	117	0.0	46
1909									
1910									
1911									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1912	PRE-icfp-gen-11.14	0.3	89	0.2	99	0.1	37	0.0	39
1913	PRE-icfp-gen-11.15	0.1	56	1.5	83	0.8	71	0.0	47
1914	PRE-icfp-gen-11.16	0.7	65	2.2	37	6.7	389	0.0	29
1917	PRE-icfp-gen-11.17	7.2	245	265.2	144	TO		0.0	107
1918	PRE-icfp-gen-11.18	0.2	98	1.5	31	0.5	92	0.0	35
1919	PRE-icfp-gen-11.19	0.2	49	1.4	61	0.6	89	0.0	21
1920	PRE-icfp-gen-11.2	0.3	181	2.9	277	0.7	223	0.0	33
1921	PRE-icfp-gen-11.20	0.3	245	6.0	139	1.5	185	0.1	73
1922	PRE-icfp-gen-11.3	5.9	24	15.8	165	29.4	254	0.0	95
1923	PRE-icfp-gen-11.4	0.4	270	0.3	225	0.5	281	0.0	111
1924	PRE-icfp-gen-11.5	0.3	33	0.1	29	0.1	33	0.0	38
1925	PRE-icfp-gen-11.6	0.0	2	0.0	2	0.0	2	0.0	4
1926	PRE-icfp-gen-11.7	0.1	43	0.1	53	0.1	46	0.0	25
1927	PRE-icfp-gen-11.8	0.1	69	0.1	19	0.1	19	0.0	45
1928	PRE-icfp-gen-11.9	0.1	96	0.1	35	0.9	82	0.0	58
1929	PRE-icfp-gen-12.1	0.5	89	1.6	69	4.5	425	0.0	51
1930	PRE-icfp-gen-12.10	0.2	88	2.8	99	0.4	109	0.0	38
1931	PRE-icfp-gen-12.11	0.0	17	0.1	29	0.1	24	0.0	25
1932	PRE-icfp-gen-12.12	0.1	25	0.0	23	0.1	23	0.0	33
1933	PRE-icfp-gen-12.13	0.2	146	4.9	145	1.4	222	0.0	57
1934	PRE-icfp-gen-12.14	0.3	34	0.8	50	42.0	80	0.1	38
1935	PRE-icfp-gen-12.15	2.1	100	2.6	48	10.2	182	0.1	75
1936	PRE-icfp-gen-12.16	0.1	54	0.2	53	0.1	56	0.0	86
1937	PRE-icfp-gen-12.17	0.1	19	0.1	42	0.0	32	0.0	33
1938	PRE-icfp-gen-12.18	0.1	71	0.6	17	0.7	69	0.0	17
1939	PRE-icfp-gen-12.19	0.2	141	1.4	171	1.5	216	0.0	23
1940	PRE-icfp-gen-12.2	0.1	100	0.1	40	0.0	40	0.0	59
1941	PRE-icfp-gen-12.20	0.1	70	0.3	163	0.4	331	0.0	275
1942	PRE-icfp-gen-12.3	0.2	24	0.0	16	0.0	16	0.0	18
1943	PRE-icfp-gen-12.4	1.2	65	0.7	44	10.0	60	0.0	44
1944	PRE-icfp-gen-12.5	0.2	109	3.2	115	0.7	107	0.0	64
1945	PRE-icfp-gen-12.6	0.2	178	3.0	247	1.6	303	0.0	70
1946	PRE-icfp-gen-12.7	0.6	35	0.6	23	0.5	24	0.0	23
1947	PRE-icfp-gen-12.8	0.1	23	0.2	53	0.3	90	0.0	52
1948	PRE-icfp-gen-12.9	0.4	120	6.4	248	0.9	148	0.0	97
1949	PRE-icfp-gen-13.1	0.4	347	7.6	463	5.8	534	0.1	110
1950	PRE-icfp-gen-13.10	0.1	20	0.1	26	0.0	30	0.0	32
1951	PRE-icfp-gen-13.11	0.5	58	2.9	109	0.8	83	0.0	85
1952	PRE-icfp-gen-13.12	0.0	27	0.1	29	0.0	29	0.0	36
1953	PRE-icfp-gen-13.13	1.0	177	1.8	116	1.4	134	0.0	93
1954	PRE-icfp-gen-13.14	0.1	32	0.2	40	0.2	46	0.0	36
1955	PRE-icfp-gen-13.15	0.5	174	9.9	310	3.2	337	0.0	77
1956	PRE-icfp-gen-13.16	0.3	152	1.7	167	2.1	260	0.0	99
1957	PRE-icfp-gen-13.17	0.1	108	3.2	76	1.3	105	0.0	24
1958	PRE-icfp-gen-13.18	0.5	86	4.1	111	1.7	127	0.0	91
1959	PRE-icfp-gen-13.19	0.4	41	0.1	39	0.1	39	0.0	35
1960									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
1961									
1962									
1963	PRE-icfp-gen-13.2	0.1	43	0.1	24	0.0	20	0.0	22
1964	PRE-icfp-gen-13.20	0.5	287	3.5	249	2.4	426	0.0	159
1965	PRE-icfp-gen-13.3	0.2	100	2.7	139	0.8	132	0.0	57
1966	PRE-icfp-gen-13.4	0.3	118	1.3	192	1.6	182	0.0	41
1967	PRE-icfp-gen-13.5	7.7	137	19.3	137	4.7	244	0.0	88
1968	PRE-icfp-gen-13.6	0.0	60	0.1	41	0.1	33	0.0	35
1969	PRE-icfp-gen-13.7	0.1	108	0.1	40	0.1	41	0.0	64
1970	PRE-icfp-gen-13.8	0.4	108	0.5	62	1.4	59	0.0	64
1971	PRE-icfp-gen-13.9	0.2	71	0.3	78	0.4	115	0.0	61
1972	PRE-icfp-gen-14.1	1.4	81	1.7	51	11.7	100	0.0	49
1973	PRE-icfp-gen-14.10	2.6	96	3.8	205	0.7	147	0.0	125
1974	PRE-icfp-gen-14.11	0.5	109	4.2	171	2.7	103	0.0	41
1975	PRE-icfp-gen-14.12	0.0	8	0.0	10	0.0	12	0.0	14
1976	PRE-icfp-gen-14.13	0.2	123	2.6	144	1.6	200	0.0	33
1977	PRE-icfp-gen-14.14	66.4	252	2.3	43	1.4	208	0.0	61
1978	PRE-icfp-gen-14.15	2.0	154	17.8	130	5.2	263	0.0	58
1979	PRE-icfp-gen-14.16	0.2	60	0.1	36	0.1	38	0.0	47
1980	PRE-icfp-gen-14.17	0.0	20	0.0	11	0.0	11	0.0	13
1981	PRE-icfp-gen-14.18	0.1	77	1.4	128	0.5	156	0.0	51
1982	PRE-icfp-gen-14.19	0.8	166	3.1	104	1.1	104	0.0	84
1983	PRE-icfp-gen-14.2	0.0	19	0.1	13	0.0	13	0.0	15
1984	PRE-icfp-gen-14.20	0.2	91	6.2	68	0.6	42	0.0	50
1985	PRE-icfp-gen-14.3	1.2	118	3.0	44	1.5	189	0.1	41
1986	PRE-icfp-gen-14.4	0.2	128	0.2	43	0.2	141	0.0	55
1987	PRE-icfp-gen-14.5	0.3	146	6.1	111	0.7	54	0.0	65
1988	PRE-icfp-gen-14.6	0.4	137	1.6	51	1.0	70	0.0	60
1989	PRE-icfp-gen-14.7	0.2	49	1.3	100	0.6	62	0.0	43
1990	PRE-icfp-gen-14.8	0.1	17	0.1	23	0.0	23	0.0	27
1991	PRE-icfp-gen-14.9	TO		TO		272.2	84	0.1	47
1992	PRE-icfp-gen-15.1	0.3	49	0.1	26	0.1	19	0.0	19
1993	PRE-icfp-gen-15.10	0.2	124	1.5	37	0.6	19	0.0	11
1994	PRE-icfp-gen-15.11	0.1	89	3.9	93	0.7	138	0.0	41
1995	PRE-icfp-gen-15.12	1.3	46	2.0	97	7.3	81	0.0	63
1996	PRE-icfp-gen-15.13	0.1	51	0.0	28	0.1	30	0.0	40
1997	PRE-icfp-gen-15.14	0.5	334	6.4	482	3.1	403	0.0	173
1998	PRE-icfp-gen-15.15	0.3	42	2.9	91	1.0	85	0.0	45
1999	PRE-icfp-gen-15.16	0.1	132	0.1	42	0.2	96	0.0	48
2000	PRE-icfp-gen-15.17	0.3	252	3.2	148	2.1	280	0.0	163
2001	PRE-icfp-gen-15.18	0.2	170	0.1	60	1.2	148	0.0	63
2002	PRE-icfp-gen-15.19	0.3	44	2.0	50	1.2	233	0.0	47
2003	PRE-icfp-gen-15.2	0.5	72	1.3	65	0.2	98	0.0	75
2004	PRE-icfp-gen-15.20	0.3	19	1.7	65	0.9	99	0.0	40
2005	PRE-icfp-gen-15.3	0.4	111	0.1	43	0.1	54	0.0	86
2006	PRE-icfp-gen-15.4	0.2	146	2.7	137	1.1	160	0.0	81
2007	PRE-icfp-gen-15.5	0.2	30	0.9	28	8.9	81	0.0	33
2008	PRE-icfp-gen-15.6	0.3	82	3.4	57	1.3	110	0.0	47
2009									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
2010									
2011									
2012	PRE-icfp-gen-15.7	0.4	81	0.4	40	0.9	67	0.0	48
2013	PRE-icfp-gen-15.8	0.5	345	4.0	89	2.7	382	0.0	145
2014	PRE-icfp-gen-15.9	0.5	323	9.6	164	2.6	205	0.0	108
2015	PRE-icfp-gen-2.1	4.8	153	47.1	83	0.6	68	0.0	73
2016	PRE-icfp-gen-2.10	0.7	68	0.3	94	4.1	109	0.0	128
2017	PRE-icfp-gen-2.11	0.2	181	2.7	198	1.4	240	0.0	53
2018	PRE-icfp-gen-2.12	0.1	23	0.0	16	0.0	18	0.0	19
2019	PRE-icfp-gen-2.13	0.8	148	3.3	87	54.5	205	0.0	54
2020	PRE-icfp-gen-2.14	0.1	80	0.1	65	0.1	67	0.0	44
2021	PRE-icfp-gen-2.15	0.5	234	6.8	238	2.7	334	0.0	109
2022	PRE-icfp-gen-2.16	0.7	25	0.2	34	0.1	60	0.0	75
2023	PRE-icfp-gen-2.17	8.0	311	0.8	45	TO		0.0	47
2024	PRE-icfp-gen-2.18	0.4	58	0.2	46	1.3	106	0.0	43
2025	PRE-icfp-gen-2.19	0.1	21	0.1	15	0.1	15	0.0	15
2026	PRE-icfp-gen-2.2	0.4	70	0.7	14	0.0	14	0.0	17
2027	PRE-icfp-gen-2.20	0.3	133	4.9	137	0.5	122	0.1	43
2028	PRE-icfp-gen-2.3	0.1	31	0.1	26	0.0	29	0.0	30
2029	PRE-icfp-gen-2.4	0.3	182	2.9	199	1.2	188	0.0	57
2030	PRE-icfp-gen-2.5	0.1	34	1.1	45	0.6	86	0.0	37
2031	PRE-icfp-gen-2.6	0.3	116	1.6	98	0.7	159	0.0	52
2032	PRE-icfp-gen-2.7	0.2	76	2.9	100	0.5	103	0.0	61
2033	PRE-icfp-gen-2.8	0.0	22	0.0	15	0.0	14	0.0	25
2034	PRE-icfp-gen-2.9	0.0	19	0.1	24	0.0	25	0.0	30
2035	PRE-icfp-gen-3.1	0.4	77	0.1	51	0.1	42	0.0	31
2036	PRE-icfp-gen-3.10	2.9	271	1.4	45	9.1	206	0.2	43
2037	PRE-icfp-gen-3.11	0.0	29	0.0	12	0.0	12	0.0	14
2038	PRE-icfp-gen-3.12	0.0	20	0.1	21	0.1	22	0.0	27
2039	PRE-icfp-gen-3.13	0.1	44	0.2	22	0.2	85	0.0	30
2040	PRE-icfp-gen-3.14	1.5	45	13.5	26	0.8	32	0.0	72
2041	PRE-icfp-gen-3.15	0.0	20	0.0	24	0.0	25	0.0	41
2042	PRE-icfp-gen-3.16	0.3	171	3.2	216	0.8	203	0.0	95
2043	PRE-icfp-gen-3.17	0.2	57	2.4	107	1.0	92	0.0	39
2044	PRE-icfp-gen-3.18	1.0	361	7.7	750	13.6	787	0.0	280
2045	PRE-icfp-gen-3.19	0.5	40	0.1	26	0.2	26	0.0	35
2046	PRE-icfp-gen-3.2	0.0	10	0.0	13	0.0	15	0.0	17
2047	PRE-icfp-gen-3.20	0.4	98	4.3	146	3.7	346	0.0	39
2048	PRE-icfp-gen-3.3	1.9	183	3.1	88	0.8	75	0.0	57
2049	PRE-icfp-gen-3.4	0.0	2	0.0	3	0.0	3	0.0	3
2050	PRE-icfp-gen-3.5	0.0	22	0.1	22	0.1	22	0.0	29
2051	PRE-icfp-gen-3.6	1.4	69	4.6	82	1.4	127	0.0	35
2052	PRE-icfp-gen-3.7	0.3	163	1.5	109	0.6	41	0.0	54
2053	PRE-icfp-gen-3.8	0.4	51	0.2	33	0.1	32	0.0	57
2054	PRE-icfp-gen-3.9	0.0	10	0.0	13	0.0	15	0.0	17
2055	PRE-icfp-gen-4.1	0.3	134	3.5	163	1.6	194	0.0	100
2056	PRE-icfp-gen-4.10	0.0	16	0.0	21	0.0	22	0.0	23
2057	PRE-icfp-gen-4.11	25.3	175	6.2	37	0.6	37	0.0	36
2058									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
2059									
2060									
2061	PRE-icfp-gen-4.12	0.3	48	0.0	17	0.0	17	0.0	19
2062	PRE-icfp-gen-4.13	0.4	147	1.6	265	2.2	251	0.0	83
2063	PRE-icfp-gen-4.14	0.2	171	0.2	85	0.2	72	0.0	87
2064	PRE-icfp-gen-4.15	0.0	13	0.0	14	0.0	14	0.0	16
2065	PRE-icfp-gen-4.16	0.2	97	2.5	82	1.4	58	0.0	37
2066	PRE-icfp-gen-4.17	21.5	183	11.5	141	27.5	200	0.0	58
2067	PRE-icfp-gen-4.18	0.0	46	0.0	22	0.0	22	0.0	24
2068	PRE-icfp-gen-4.19	8.0	215	17.0	187	2.6	255	0.1	64
2069	PRE-icfp-gen-4.2	0.1	57	1.4	62	0.5	50	0.0	37
2070	PRE-icfp-gen-4.20	3.0	195	1.7	43	6.1	230	0.0	70
2071	PRE-icfp-gen-4.3	0.1	147	0.1	28	0.1	35	0.0	31
2072	PRE-icfp-gen-4.4	0.2	99	0.2	118	0.2	162	0.0	36
2073	PRE-icfp-gen-4.5	0.6	88	0.3	38	0.4	219	0.0	37
2074	PRE-icfp-gen-4.6	0.4	35	0.1	27	0.0	23	0.1	31
2075	PRE-icfp-gen-4.7	1.2	75	0.1	34	0.1	45	0.1	51
2076	PRE-icfp-gen-4.8	0.4	105	0.6	189	TO		0.0	205
2077	PRE-icfp-gen-4.9	0.2	123	1.5	128	1.5	248	0.0	69
2078	PRE-icfp-gen-5.1	4.1	94	6.3	158	2.1	119	0.1	38
2079	PRE-icfp-gen-5.10	0.1	30	0.1	24	0.1	34	0.0	60
2080	PRE-icfp-gen-5.11	0.4	113	4.4	123	1.7	143	0.0	154
2081	PRE-icfp-gen-5.12	TO		TO		TO		0.1	37
2082	PRE-icfp-gen-5.13	0.2	70	1.4	34	6.9	101	0.0	46
2083	PRE-icfp-gen-5.14	0.1	49	0.4	68	0.3	59	0.0	58
2084	PRE-icfp-gen-5.15	0.2	121	2.5	112	1.2	191	0.0	33
2085	PRE-icfp-gen-5.16	0.1	51	1.3	81	0.7	39	0.0	11
2086	PRE-icfp-gen-5.17	0.5	95	2.9	104	1.3	174	0.0	131
2087	PRE-icfp-gen-5.18	0.2	112	2.5	123	1.0	153	0.0	35
2088	PRE-icfp-gen-5.19	0.8	24	0.3	36	0.1	21	0.0	23
2089	PRE-icfp-gen-5.2	0.3	46	1.5	70	0.4	39	0.0	43
2090	PRE-icfp-gen-5.20	0.0	14	0.0	15	0.0	15	0.0	17
2091	PRE-icfp-gen-5.3	3.9	158	2.5	139	0.6	97	0.1	55
2092	PRE-icfp-gen-5.4	0.7	137	3.8	177	0.9	153	0.0	47
2093	PRE-icfp-gen-5.5	0.3	147	3.0	152	0.9	78	0.0	51
2094	PRE-icfp-gen-5.6	0.1	63	0.2	59	1.7	142	0.0	40
2095	PRE-icfp-gen-5.7	0.0	26	0.1	33	0.0	33	0.0	35
2096	PRE-icfp-gen-5.8	0.4	144	0.5	93	0.3	69	0.1	57
2097	PRE-icfp-gen-5.9	0.2	139	2.8	173	0.9	154	0.0	39
2098	PRE-icfp-gen-6.1	0.5	165	5.4	185	4.8	249	0.0	127
2099	PRE-icfp-gen-6.10	0.4	140	6.3	201	2.5	375	0.1	148
2100	PRE-icfp-gen-6.11	0.1	17	0.0	13	0.0	18	0.0	23
2101	PRE-icfp-gen-6.12	0.0	4	0.0	5	0.0	5	0.0	5
2102	PRE-icfp-gen-6.13	0.4	16	4.3	26	0.1	26	0.0	85
2103	PRE-icfp-gen-6.14	0.4	118	1.9	42	1.1	113	0.0	63
2104	PRE-icfp-gen-6.15	0.1	49	0.0	21	0.0	21	0.0	25
2105	PRE-icfp-gen-6.16	0.1	29	0.1	35	0.1	30	0.0	35
2106	PRE-icfp-gen-6.17	0.4	124	0.4	38	0.3	61	0.0	64
2107									

	Benchmark	CVC4		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size
2108	PRE-icfp-gen-6.18	0.1	76	0.2	119	1.5	169	0.0	74
2109	PRE-icfp-gen-6.19	0.5	211	1.8	85	1.2	204	0.0	77
2110	PRE-icfp-gen-6.2	0.3	157	1.6	82	0.2	37	0.0	33
2111	PRE-icfp-gen-6.20	0.0	1	0.0	1	0.0	1	0.0	1
2112	PRE-icfp-gen-6.3	0.3	239	6.3	283	2.5	330	0.0	100
2113	PRE-icfp-gen-6.4	0.3	56	1.5	38	1.1	76	0.0	41
2114	PRE-icfp-gen-6.5	1.8	75	153.2	51	1.0	67	0.0	211
2115	PRE-icfp-gen-6.6	0.5	129	3.8	45	0.9	72	0.0	60
2116	PRE-icfp-gen-6.7	0.2	78	0.1	28	2.1	82	0.0	33
2117	PRE-icfp-gen-6.8	0.6	126	0.2	129	0.2	69	0.0	139
2118	PRE-icfp-gen-6.9	24.6	179	55.2	39	40.9	161	0.0	39
2119	PRE-icfp-gen-7.1	18.6	112	11.8	178	51.6	337	0.0	54
2120	PRE-icfp-gen-7.10	0.2	43	0.1	56	0.2	52	0.0	56
2121	PRE-icfp-gen-7.11	0.2	109	2.9	61	0.7	154	0.0	40
2122	PRE-icfp-gen-7.12	0.1	92	2.7	74	0.5	115	0.0	39
2123	PRE-icfp-gen-7.13	0.3	89	1.7	53	0.6	66	0.0	35
2124	PRE-icfp-gen-7.14	18.6	64	38.5	45	19.8	345	0.0	132
2125	PRE-icfp-gen-7.15	0.4	99	0.1	23	0.6	74	0.0	33
2126	PRE-icfp-gen-7.16	0.1	34	0.2	33	0.0	47	0.0	37
2127	PRE-icfp-gen-7.17	0.1	18	0.1	23	0.0	24	0.0	27
2128	PRE-icfp-gen-7.18	0.2	22	1.5	101	0.6	17	0.0	15
2129	PRE-icfp-gen-7.19	0.1	36	0.1	36	0.1	61	0.0	46
2130	PRE-icfp-gen-7.2	0.2	59	0.1	37	0.1	39	0.0	33
2131	PRE-icfp-gen-7.20	0.4	244	3.3	65	1.0	69	0.0	164
2132	PRE-icfp-gen-7.3	0.9	31	1.1	24	1.2	71	0.0	26
2133	PRE-icfp-gen-7.4	1.0	273	4.1	428	5.6	665	0.0	151
2134	PRE-icfp-gen-7.5	0.3	75	3.3	67	4.1	250	0.0	34
2135	PRE-icfp-gen-7.6	0.4	136	3.3	70	2.5	231	0.0	78
2136	PRE-icfp-gen-7.7	0.3	119	0.5	80	0.4	128	0.0	90
2137	PRE-icfp-gen-7.8	564.9	227	TO		99.8	33	0.3	31
2138	PRE-icfp-gen-7.9	0.2	124	1.6	155	0.8	167	0.0	46
2139	PRE-icfp-gen-8.1	43.5	99	TO		0.8	216	0.0	31
2140	PRE-icfp-gen-8.10	0.5	262	2.0	510	4.1	414	0.0	163
2141	PRE-icfp-gen-8.11	0.6	212	3.5	84	0.8	99	0.0	173
2142	PRE-icfp-gen-8.12	0.3	38	0.0	15	0.0	15	0.0	17
2143	PRE-icfp-gen-8.13	0.2	10	0.1	17	0.0	13	0.0	15
2144	PRE-icfp-gen-8.14	0.3	148	1.5	112	0.5	69	0.0	49
2145	PRE-icfp-gen-8.15	1.1	222	2.5	46	0.7	49	0.1	70
2146	PRE-icfp-gen-8.16	0.6	27	0.2	21	0.1	23	0.0	28
2147	PRE-icfp-gen-8.17	0.0	52	0.0	31	0.0	42	0.0	37
2148	PRE-icfp-gen-8.18	0.2	110	5.0	41	0.4	54	0.0	73
2149	PRE-icfp-gen-8.19	0.2	125	4.3	179	0.5	156	0.0	58
2150	PRE-icfp-gen-8.2	0.0	36	0.1	41	0.0	20	0.0	33
2151	PRE-icfp-gen-8.20	0.4	218	3.0	356	2.3	417	0.0	127
2152	PRE-icfp-gen-8.3	1.1	100	0.5	87	1.7	143	0.0	87
2153	PRE-icfp-gen-8.4	2.0	33	1.7	30	0.6	49	0.0	34
2154									
2155									
2156									

Benchmark	CVC4		DUET		SIMBA		BITEN	
	Time	Size	Time	Size	Time	Size	Time	Size
PRE-icfp-gen-8.5	0.2	107	1.4	27	0.9	56	0.0	57
PRE-icfp-gen-8.6	0.2	62	4.7	79	1.2	235	0.0	51
PRE-icfp-gen-8.7	2.7	29	1.3	27	0.1	30	0.0	79
PRE-icfp-gen-8.8	0.2	122	0.3	126	2.8	179	0.0	177
PRE-icfp-gen-8.9	0.1	96	1.4	120	0.9	108	0.0	57
PRE-icfp-gen-9.1	0.2	46	2.0	42	1.0	136	0.0	31
PRE-icfp-gen-9.10	0.3	69	0.7	61	0.1	45	0.2	43
PRE-icfp-gen-9.11	1.5	112	0.3	87	2.3	132	0.0	131
PRE-icfp-gen-9.12	1.9	145	0.3	128	0.1	127	0.0	59
PRE-icfp-gen-9.13	0.0	59	0.1	32	0.0	25	0.0	25
PRE-icfp-gen-9.14	0.1	59	0.4	106	0.1	36	0.0	43
PRE-icfp-gen-9.15	0.2	99	0.3	72	0.6	142	0.0	34
PRE-icfp-gen-9.16	0.1	13	0.0	17	0.0	20	0.0	23
PRE-icfp-gen-9.17	0.2	48	1.5	71	1.4	170	0.0	37
PRE-icfp-gen-9.18	0.2	38	1.4	56	0.8	123	0.1	63
PRE-icfp-gen-9.19	0.4	81	2.4	128	1.6	156	0.0	45
PRE-icfp-gen-9.2	0.1	77	1.3	116	0.8	131	0.0	30
PRE-icfp-gen-9.20	0.1	22	0.1	28	0.1	101	0.0	34
PRE-icfp-gen-9.3	0.3	186	1.6	185	1.7	158	0.0	55
PRE-icfp-gen-9.4	0.2	177	1.6	71	0.8	86	0.0	74
PRE-icfp-gen-9.5	0.1	40	0.2	60	0.9	60	0.0	63
PRE-icfp-gen-9.6	1.2	172	3.0	350	68.9	462	0.0	176
PRE-icfp-gen-9.7	0.1	70	0.1	35	0.0	44	0.0	51
PRE-icfp-gen-9.8	0.0	20	0.0	22	0.0	27	0.0	37
PRE-icfp-gen-9.9	0.9	182	1.7	32	0.4	38	0.0	69
if0-70-10	0.0	15	0.0	22	0.0	22	0.0	23
if0-70-100	0.1	15	0.1	22	0.0	22	0.0	23
if0-70-1000	0.4	15	5.1	22	0.1	22	0.0	23

B.3 Deobfuscation

Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
	Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
target-0	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
target-1	9.4	13	2.6	10	195.4	13	0.5	13	0.1	11
target-10	71.3	15	1.7	8	1.7	16	0.1	14	0.0	13
target-100	0.0	10	0.7	4	0.0	10	0.0	13	0.0	4
target-101	3.2	12	1.6	9	2.5	12	0.1	12	0.0	9
target-102	0.1	11	0.8	5	0.0	12	0.0	11	0.0	8
target-103	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
target-104	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
target-105	0.7	11	1.1	8	5.1	11	1.5	14	0.1	14
target-106	TO		TO		TO		13.2	20	0.9	17
target-107	TO		TO		TO		331.9	23	2.2	17
target-108	0.0	7	0.7	4	0.0	10	0.0	10	0.0	4
target-109	TO		TO		87.2	20	2.9	20	0.2	15

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2206	target-11	0.0	6	0.7	3	0.0	6	0.0	6	0.0	4
2207	target-110	1.7	12	1.3	9	0.1	13	0.0	12	0.0	9
2208	target-111	TO		80.9	12	TO		491.5	15	4.7	12
2211	target-112	0.0	5	0.6	2	0.0	5	0.0	5	0.0	2
2212	target-113	0.0	7	0.7	4	0.0	7	0.1	7	0.0	4
2213	target-114	0.0	4	Error		0.0	4	0.0	5	0.0	5
2214	target-115	TO		TO		TO		485.7	21	2.7	15
2215	target-116	TO		141.4	11	1.7	20	0.1	17	0.0	11
2216	target-117	54.5	15	2.8	9	73.1	19	4.3	18	0.1	12
2217	target-118	0.8	6	2.2	3	0.2	6	0.3	6	0.0	3
2218	target-119	0.0	8	0.7	5	0.0	11	0.0	12	0.0	10
2219	target-12	0.0	8	0.7	5	0.0	9	0.0	9	0.0	6
2220	target-120	TO		363.4	12	56.2	25	0.4	19	0.1	13
2221	target-121	1.9	12	1.9	9	3.9	15	0.1	14	0.0	12
2222	target-122	TO		TO		TO		269.6	23	1.0	22
2223	target-123	1.7	11	2.5	8	3.4	29	2.6	18	0.1	14
2224	target-124	TO		TO		1.0	16	9.9	16	133.2	24
2225	target-125	0.2	12	0.8	6	0.2	12	0.3	17	0.0	12
2226	target-126	12.4	14	1.7	8	0.1	14	0.1	17	0.0	11
2227	target-127	4.1	12	1.4	9	0.1	12	0.1	12	0.0	11
2228	target-128	2.0	13	2.5	7	0.2	13	0.4	13	0.1	15
2229	target-129	0.0	5	Error		0.0	8	0.0	5	0.0	6
2230	target-13	0.0	3	Error		0.0	3	0.0	3	0.0	3
2231	target-130	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2232	target-131	TO		255.9	13	8.8	16	0.2	16	0.2	14
2233	target-132	0.1	12	0.8	6	0.1	16	0.1	16	0.0	10
2234	target-133	4.0	12	1.7	9	0.0	14	0.0	12	0.0	11
2235	target-134	TO		162.5	13	0.6	19	0.7	16	25.4	22
2236	target-135	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2237	target-136	TO		TO		TO		TO		1.8	15
2238	target-137	0.4	10	0.9	7	0.1	14	0.1	13	0.0	10
2239	target-138	0.4	10	0.9	7	0.1	14	0.0	11	0.0	9
2240	target-139	0.8	4	Error		0.2	4	0.5	4	0.0	8
2241	target-14	0.4	9	0.8	6	0.0	16	0.0	10	0.0	7
2242	target-140	7.7	15	4.4	9	5.8	15	0.2	15	0.0	9
2243	target-141	0.8	6	Error		0.2	6	0.6	6	0.0	6
2244	target-142	TO		TO		TO		TO		TO	
2245	target-143	TO		TO		TO		TO		92.0	21
2246	target-144	TO		TO		113.0	20	1.5	20	0.6	15
2247	target-145	TO		148.3	11	TO		0.2	17	3.2	17
2248	target-146	1.2	5	2.5	2	0.6	5	0.6	5	0.0	2
2249	target-147	TO		TO		TO		249.3	22	0.7	18
2250	target-148	1.7	11	2.7	8	0.3	11	0.8	11	0.0	9
2251	target-149	TO		TO		1.6	22	29.9	21	0.6	16
2252	target-15	1.3	10	2.3	7	0.2	10	0.4	10	0.0	7
2253	target-150	TO		36.5	10	TO		12.6	17	0.7	11
2254											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2255	target-151	TO		369.8	12	TO		TO		5.4	24
2256	target-152	1.2	12	1.8	9	0.3	18	0.1	12	0.0	9
2257	target-153	TO		10.8	11	98.4	14	2.9	14	0.2	11
2258	target-154	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2259	target-155	0.1	10	0.9	7	1.0	22	0.0	10	0.0	8
2260	target-156	127.5	14	16.4	11	0.1	14	0.1	14	0.0	13
2261	target-157	0.0	6	0.6	3	0.0	6	0.0	6	0.0	3
2262	target-158	TO		Error		TO		5.7	21	0.6	19
2263	target-159	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2264	target-16	TO		82.1	12	40.5	16	0.3	15	0.1	13
2265	target-160	0.1	10	0.9	7	0.0	10	0.0	10	0.0	9
2266	target-161	0.0	5	0.6	2	0.0	5	0.0	5	0.0	2
2267	target-162	212.8	16	11.7	10	3.5	16	0.7	16	0.0	10
2268	target-163	0.3	9	0.8	6	0.0	11	0.0	10	0.0	7
2269	target-164	TO		387.1	13	TO		141.6	21	0.1	35
2270	target-165	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2271	target-166	112.4	13	7.6	10	94.2	19	1.6	15	0.1	13
2272	target-167	1.5	10	3.0	7	0.3	13	0.5	12	0.0	9
2273	target-168	91.1	13	4.0	10	0.8	13	0.0	13	0.0	10
2274	target-169	TO		TO		TO		TO		34.0	20
2275	target-17	3.3	12	3.5	9	99.6	16	0.5	12	0.0	10
2276	target-170	TO		TO		TO		TO		TO	
2277	target-171	TO		160.8	13	3.3	23	0.1	16	0.0	13
2278	target-172	TO		TO		172.3	23	299.2	23	TO	
2279	target-173	TO		119.7	12	0.0	15	0.6	15	167.7	25
2280	target-174	TO		Error		TO		3.7	19	0.8	15
2281	target-175	29.5	14	3.0	8	0.4	14	0.8	14	0.0	8
2282	target-176	0.0	8	0.7	5	0.0	11	0.0	8	0.0	6
2283	target-177	TO		10.2	10	2.8	16	1.7	16	0.0	11
2284	target-178	0.5	12	0.9	6	0.1	15	0.0	14	0.0	8
2285	target-179	0.3	10	1.0	7	2.6	10	0.1	11	0.0	8
2286	target-18	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2287	target-180	1.1	11	3.3	5	0.2	14	0.5	15	0.0	9
2288	target-181	TO		TO		36.6	20	2.0	21	0.1	15
2289	target-182	578.1	16	115.0	12	36.9	19	0.5	15	0.1	14
2290	target-183	0.8	9	2.1	3	0.2	9	0.5	9	0.0	3
2291	target-184	4.5	11	1.1	8	0.1	11	0.0	11	0.0	10
2292	target-185	3.7	12	3.4	9	10.0	29	0.9	12	0.0	9
2293	target-186	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2294	target-187	30.2	14	1.4	8	0.2	14	0.1	14	0.0	8
2295	target-188	TO		2.0	10	0.1	18	0.5	18	0.0	18
2296	target-189	1.4	12	1.1	8	0.1	12	0.0	11	0.0	8
2297	target-19	0.0	8	0.7	5	0.0	8	0.0	10	0.0	8
2298	target-190	3.9	11	1.0	8	0.0	12	0.0	12	0.0	9
2299	target-191	TO		Error		TO		25.7	18	1.2	14
2300	target-192	59.6	14	6.5	10	0.5	15	0.5	14	0.0	11
2301											
2302											
2303											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2304	target-193	0.1	12	0.8	6	0.3	16	0.0	12	0.0	6
2305	target-194	0.0	8	0.7	5	0.1	8	0.0	8	0.0	5
2306	target-195	2.8	13	3.8	7	0.2	13	0.7	13	0.0	9
2307	target-196	TO		516.7	12	TO		0.5	18	0.1	14
2308	target-197	TO		TO		TO		0.3	18	0.1	16
2309	target-198	7.8	15	1.6	9	1.4	17	0.3	15	0.0	9
2310	target-199	209.0	13	1.5	10	178.9	19	32.8	19	0.0	14
2311	target-2	0.0	5	0.6	2	0.0	5	0.0	5	0.0	2
2312	target-20	0.3	9	0.8	6	0.0	9	0.0	9	0.0	6
2313	target-200	0.0	7	0.7	4	0.1	7	0.0	7	0.0	9
2314	target-201	1.5	12	1.9	9	TO		0.6	12	0.9	15
2315	target-202	0.0	8	0.7	5	0.0	8	0.1	8	0.0	5
2316	target-203	TO		TO		78.2	22	12.3	21	TO	
2317	target-204	TO		TO		TO		32.7	21	TO	
2318	target-205	TO		TO		TO		0.5	17	4.3	25
2319	target-206	TO		TO		171.5	25	1.8	19	0.1	13
2320	target-207	86.0	15	2.9	9	0.1	22	0.1	16	0.0	9
2321	target-208	16.0	15	5.5	9	0.7	20	0.1	15	0.0	10
2322	target-209	TO		TO		1.5	23	0.5	17	0.0	14
2323	target-21	TO		8.3	11	2.6	20	0.4	15	0.0	11
2324	target-210	1.3	10	2.3	7	0.2	12	0.4	12	0.0	9
2325	target-211	1.5	13	2.9	7	0.2	13	0.3	15	0.0	10
2326	target-212	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2327	target-213	TO		TO		TO		TO		TO	
2328	target-214	0.9	7	2.7	4	0.2	7	0.5	7	0.0	4
2329	target-215	1.2	8	2.5	5	0.8	8	0.5	8	0.0	5
2330	target-216	89.8	14	7.2	10	0.3	13	0.4	13	0.9	18
2331	target-217	TO		TO		TO		TO		TO	
2332	target-218	1.0	5	2.4	2	0.2	5	0.4	5	0.0	2
2333	target-219	6.4	14	1.6	8	0.0	14	0.1	14	0.0	8
2334	target-22	1.3	11	4.6	8	4.5	11	2.6	18	0.0	16
2335	target-220	0.2	10	0.8	6	0.5	9	0.0	10	0.0	6
2336	target-221	396.5	16	27.3	10	1.6	25	0.7	16	0.0	12
2337	target-222	15.8	13	5.1	10	0.3	13	0.5	13	0.0	19
2338	target-223	TO		TO		80.5	19	36.0	19	0.1	23
2339	target-224	2.3	12	3.2	9	TO		0.5	12	0.9	9
2340	target-225	TO		TO		TO		TO		16.0	19
2341	target-226	4.4	11	1.2	8	0.0	11	0.0	11	0.1	8
2342	target-227	66.9	13	3.8	10	5.1	13	0.6	13	0.2	11
2343	target-228	TO		495.8	12	2.1	18	0.3	18	0.0	13
2344	target-229	TO		TO		TO		21.9	23	0.7	17
2345	target-23	38.2	11	1.3	8	0.6	11	0.3	11	0.0	8
2346	target-230	TO		TO		TO		TO		147.3	21
2347	target-231	1.4	13	1.1	7	0.0	13	0.0	13	0.0	8
2348	target-232	0.2	9	0.8	6	0.1	9	0.0	9	0.0	6
2349	target-233	5.9	15	1.8	8	0.0	18	0.0	15	0.0	10
2350											
2351											
2352											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2353	target-234	35.1	14	14.5	11	0.1	14	0.1	14	0.0	11
2354	target-235	24.9	14	3.4	7	0.5	13	0.4	13	0.0	7
2355	target-236	122.7	16	23.8	10	0.1	20	0.1	17	0.0	11
2356	target-237	TO		364.0	12	TO		0.5	18	0.0	12
2357	target-238	TO		301.2	13	4.5	27	0.1	16	0.0	13
2358	target-239	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2359	target-24	TO		585.6	12	76.5	18	6.7	18	0.1	14
2360	target-240	37.5	12	1.3	9	66.8	18	1.0	18	0.0	9
2361	target-241	0.3	10	0.9	7	0.0	10	0.0	10	0.0	7
2362	target-242	TO		TO		TO		TO		4.1	31
2363	target-243	0.0	4	0.5	1	0.0	4	0.0	4	0.0	1
2364	target-244	TO		TO		141.1	33	TO		TO	
2365	target-245	4.4	12	1.4	9	0.0	12	0.0	12	0.0	9
2366	target-246	0.7	11	1.0	8	2.2	15	0.0	11	0.0	8
2367	target-247	TO		44.2	12	0.3	17	0.3	15	168.4	12
2368	target-248	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2369	target-249	2.3	11	2.3	8	0.6	21	0.6	11	0.0	8
2370	target-25	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2371	target-250	60.4	16	11.9	10	0.1	16	0.1	16	0.0	10
2372	target-251	TO		TO		79.9	19	6.0	19	0.1	13
2373	target-252	TO		TO		535.0	19	1.5	19	0.4	14
2374	target-253	1.1	12	1.8	9	1.2	23	0.1	12	0.0	11
2375	target-254	1.3	10	1.0	7	0.1	10	0.0	10	0.0	7
2376	target-255	44.0	13	5.3	10	0.1	19	2.5	13	4.3	10
2377	target-256	TO		91.6	12	7.0	15	0.5	15	0.0	12
2378	target-257	TO		128.2	11	TO		4.4	17	0.1	11
2379	target-258	TO		TO		TO		51.8	18	0.4	13
2380	target-259	TO		TO		1.5	22	0.4	18	0.0	16
2381	target-26	TO		Error		TO		56.4	17	TO	
2382	target-260	5.1	12	1.1	8	0.1	25	0.0	13	0.0	12
2383	target-261	10.7	14	1.3	8	0.0	14	0.0	14	0.0	12
2384	target-262	0.0	8	0.7	5	0.0	8	0.0	8	0.0	6
2385	target-263	TO		TO		TO		TO		145.6	25
2386	target-264	1.1	11	0.9	7	0.0	17	0.0	10	0.0	7
2387	target-265	31.4	15	3.0	9	0.1	15	0.1	15	0.0	10
2388	target-266	TO		TO		79.7	19	1.6	19	0.1	13
2389	target-267	0.0	4	Error		0.0	8	0.0	4	0.0	5
2390	target-268	TO		TO		7.1	18	1.8	18	0.0	24
2391	target-269	0.0	7	0.7	4	0.0	7	0.0	8	0.0	5
2392	target-27	0.4	8	0.7	5	0.0	11	0.0	12	0.0	8
2393	target-270	68.0	13	5.2	10	2.8	13	0.5	13	0.0	10
2394	target-271	66.1	13	3.7	10	16.7	13	0.5	13	0.2	16
2395	target-272	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2396	target-273	84.9	12	1.9	9	0.0	12	0.0	12	0.1	25
2397	target-274	TO		TO		538.5	21	1.2	21	0.5	16
2398	target-275	0.4	12	0.8	6	0.0	14	0.0	13	0.0	8
2400											
2401											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2402	target-276	91.0	12	1.9	9	0.1	18	0.0	12	0.0	9
2403	target-277	6.9	12	1.3	9	0.5	17	0.1	12	0.0	13
2404	target-278	0.6	11	1.0	8	8.1	18	0.1	12	0.0	9
2405	target-279	0.6	11	1.1	8	0.0	11	0.1	11	0.0	14
2406	target-28	TO		TO		TO		TO		13.8	20
2407	target-280	TO		TO		TO		TO		6.9	17
2408	target-281	TO		30.0	10	0.1	23	0.5	16	21.6	17
2409	target-282	0.0	8	0.7	5	0.0	8	0.0	10	0.0	7
2410	target-283	91.7	13	3.9	10	0.1	13	0.0	13	0.0	10
2411	target-284	TO		TO		86.4	20	26.5	20	0.1	14
2412	target-285	0.8	8	2.1	5	0.2	8	0.4	8	0.0	5
2413	target-286	0.1	10	0.8	6	0.0	9	0.0	9	0.0	7
2414	target-287	0.2	10	0.8	7	0.1	10	0.0	10	0.0	7
2415	target-288	1.2	11	2.4	8	7.2	15	0.4	12	0.0	9
2416	target-289	6.7	11	1.1	8	0.3	15	0.1	14	0.0	12
2417	target-29	0.0	9	0.7	3	0.1	9	0.0	9	0.0	3
2418	target-290	TO		TO		TO		TO		14.2	42
2419	target-291	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2420	target-292	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2421	target-293	TO		TO		TO		58.6	19	0.7	14
2422	target-294	9.9	13	2.5	10	6.8	13	0.3	13	0.1	10
2423	target-295	TO		21.5	10	1.1	16	0.1	16	0.0	11
2424	target-296	0.0	6	Error		0.0	8	0.0	6	0.0	10
2425	target-297	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2426	target-298	0.7	7	1.9	4	0.2	7	0.3	10	0.0	7
2427	target-299	TO		TO		TO		123.4	19	TO	
2428	target-3	TO		135.5	11	TO		204.4	20	9.6	15
2429	target-30	TO		TO		4.9	18	2.0	18	0.1	23
2430	target-300	TO		TO		183.3	18	0.9	18	0.1	12
2431	target-301	0.9	6	2.3	3	0.2	6	0.3	6	0.0	4
2432	target-302	0.0	5	Error		0.0	5	0.0	5	0.0	5
2433	target-303	TO		TO		TO		0.5	18	159.8	27
2434	target-304	30.9	14	2.1	8	1.5	20	0.0	14	0.0	11
2435	target-305	0.0	6	Error		0.0	6	0.1	6	0.0	6
2436	target-306	0.0	8	0.8	5	0.0	8	0.0	10	0.0	7
2437	target-307	TO		TO		TO		101.7	21	1.4	14
2438	target-308	0.4	12	0.9	6	0.0	12	0.0	12	0.0	8
2439	target-309	0.2	10	0.9	7	4.2	10	0.1	10	0.0	7
2440	target-31	226.2	13	4.4	10	0.2	17	5.0	15	0.1	12
2441	target-310	90.4	14	20.3	11	0.6	15	0.4	14	0.0	12
2442	target-311	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2443	target-312	TO		TO		TO		TO		18.1	23
2444	target-313	0.2	9	0.8	6	0.0	9	0.0	9	0.0	7
2445	target-314	2.1	12	1.7	9	0.1	14	0.0	13	0.0	10
2446	target-315	1.8	10	0.9	7	0.0	12	0.0	12	0.0	9
2447	target-316	TO		161.6	13	TO		TO		24.7	19
2448											
2449											
2450											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2451	target-317	0.5	11	1.0	8	0.0	11	0.0	11	0.0	9
2452	target-318	0.9	8	2.1	5	0.3	8	0.4	8	0.0	5
2453	target-319	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2456	target-32	TO		TO		TO		TO		142.1	31
2457	target-320	TO		56.6	12	1.6	21	1.4	18	0.0	20
2458	target-321	0.6	11	1.0	8	2.3	15	0.0	11	0.0	8
2459	target-322	TO		5.3	10	0.1	13	1.8	13	1.0	19
2460	target-323	TO		TO		85.4	20	25.2	20	0.1	25
2461	target-324	11.3	13	2.5	10	0.9	14	0.2	14	0.0	11
2462	target-325	0.8	8	2.1	5	0.2	13	0.3	9	0.0	6
2463	target-326	96.9	14	22.7	11	5.2	17	0.4	15	0.0	12
2464	target-327	TO		128.2	11	2.7	19	1.3	19	0.0	16
2465	target-328	0.0	8	0.7	5	0.0	8	0.0	8	0.0	5
2466	target-329	3.5	13	1.0	7	0.0	13	0.0	13	0.0	7
2467	target-33	TO		33.8	10	232.1	27	67.7	16	0.9	13
2468	target-330	39.4	14	3.6	8	TO		0.3	14	0.0	8
2469	target-331	0.1	10	0.9	7	0.0	10	0.0	10	0.0	7
2470	target-332	TO		85.2	12	107.9	20	2.0	15	0.1	12
2471	target-333	TO		TO		TO		96.0	22	1.3	17
2472	target-334	80.0	13	1.4	9	0.0	16	0.0	12	0.0	9
2473	target-335	221.3	14	15.4	11	1.9	18	TO		6.5	17
2474	target-336	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2475	target-337	1.5	11	1.1	8	1.1	11	0.1	11	0.0	8
2476	target-338	0.4	10	0.8	7	0.0	13	0.1	12	0.0	7
2477	target-339	TO		169.5	11	TO		2.3	17	14.8	20
2478	target-34	31.9	14	2.9	10	0.1	13	0.1	13	0.0	12
2479	target-340	0.2	10	0.9	7	0.6	10	0.0	10	0.0	9
2480	target-341	6.1	12	2.0	9	0.5	17	0.3	13	0.0	10
2481	target-342	241.9	14	8.9	11	280.7	31	1.8	15	0.2	11
2482	target-343	TO		184.9	11	1.1	23	0.1	17	17.1	26
2483	target-344	1.9	12	1.0	8	0.0	12	0.0	11	0.0	9
2484	target-345	0.4	10	0.8	7	0.0	11	0.0	10	0.0	7
2485	target-346	TO		13.1	11	0.8	14	0.1	14	0.0	11
2486	target-347	TO		TO		TO		97.7	20	0.5	14
2487	target-348	275.0	14	11.8	11	TO		50.6	22	0.7	11
2488	target-349	TO		TO		TO		TO		TO	
2489	target-35	204.6	12	1.6	9	0.0	16	8.8	20	0.2	15
2490	target-350	0.9	11	1.2	8	0.0	11	0.0	12	0.0	9
2491	target-351	0.1	11	0.8	5	0.2	11	0.0	11	0.0	5
2492	target-352	TO		347.8	13	TO		0.6	16	0.0	15
2493	target-353	127.6	12	3.1	9	0.4	15	0.8	16	0.1	13
2494	target-354	69.4	11	2.9	8	0.1	11	0.1	11	0.0	18
2495	target-355	0.4	11	1.1	8	6.1	11	0.0	11	0.0	14
2496	target-356	TO		TO		TO		449.0	20	11.5	15
2497	target-357	TO		TO		45.4	19	1.0	19	0.1	13
2498	target-358	0.3	9	0.8	6	0.0	9	0.0	9	0.0	7
2499											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2500	target-359	4.4	12	2.0	9	7.9	18	0.1	12	0.0	12
2501	target-36	54.6	12	1.3	9	0.0	12	0.1	12	0.0	9
2502	target-360	TO		TO		TO		TO		14.9	16
2503	target-361	0.3	10	0.9	7	0.0	10	0.0	10	0.0	7
2504	target-362	4.3	11	1.1	8	0.0	11	0.0	11	0.0	8
2505	target-363	0.8	6	1.8	3	0.2	6	0.3	6	0.0	3
2506	target-364	TO		TO		TO		41.3	21	3.7	24
2507	target-365	27.6	15	7.1	9	TO		0.3	15	0.0	10
2508	target-366	0.2	9	0.9	6	0.0	9	0.0	9	0.0	6
2509	target-367	0.1	10	0.9	7	2.1	10	0.0	10	0.0	7
2510	target-368	TO		TO		TO		184.1	17	0.6	16
2511	target-369	0.0	4	0.5	1	0.0	4	0.0	4	0.0	1
2512	target-37	0.4	8	0.7	5	0.0	11	0.0	12	0.0	8
2513	target-370	58.6	12	2.9	9	1.7	22	1.8	12	0.0	9
2514	target-371	83.3	13	3.8	10	0.1	13	0.0	13	0.0	11
2515	target-372	TO		137.8	11	TO		0.9	17	0.1	14
2516	target-373	TO		TO		6.2	30	TO		TO	
2517	target-374	0.0	6	0.7	3	0.0	9	0.0	6	0.0	3
2518	target-375	0.4	11	1.0	8	4.2	15	0.0	12	0.0	9
2519	target-376	370.8	15	3.3	9	111.6	15	1.0	15	0.6	10
2520	target-377	TO		93.6	12	8.1	19	TO		0.6	21
2521	target-378	1.3	9	2.7	6	0.8	11	0.5	10	0.0	8
2522	target-379	79.5	13	5.1	10	1.0	13	0.7	13	0.0	16
2523	target-38	TO		154.5	13	117.4	29	2.8	16	0.3	19
2524	target-380	19.1	14	1.8	8	57.8	21	0.1	14	0.1	14
2525	target-381	0.0	4	Error		0.0	4	0.0	4	0.0	9
2526	target-382	1.4	12	1.2	8	0.9	15	0.0	14	0.0	12
2527	target-383	0.0	3	Error		0.0	3	0.0	3	0.0	3
2528	target-384	TO		72.3	12	TO		297.7	20	5.8	33
2529	target-385	15.7	15	5.3	9	38.8	16	0.5	15	0.1	9
2530	target-386	TO		TO		TO		TO		70.1	25
2531	target-387	TO		350.9	13	0.1	16	3.4	20	0.0	19
2532	target-388	3.1	14	1.5	8	79.8	14	0.2	17	0.0	12
2533	target-389	TO		156.3	11	2.1	18	0.1	17	0.0	12
2534	target-39	142.3	16	3.7	9	2.2	19	0.5	15	0.0	12
2535	target-390	0.0	6	Error		0.0	6	0.0	6	0.0	6
2536	target-391	4.6	12	1.7	9	0.1	12	0.0	12	0.0	10
2537	target-392	TO		84.4	12	0.2	15	1.2	20	0.1	19
2538	target-393	83.3	16	11.8	10	0.1	17	0.1	16	0.0	10
2539	target-394	TO		TO		0.9	25	549.3	20	34.6	26
2540	target-395	TO		TO		170.2	19	3.0	19	0.1	18
2541	target-396	TO		TO		139.3	24	0.3	16	0.0	13
2542	target-397	TO		TO		TO		58.0	21	16.7	23
2543	target-398	0.4	13	1.0	7	0.0	13	0.0	13	0.0	8
2544	target-399	TO		TO		TO		234.2	25	15.5	21
2545	target-4	TO		TO		TO		TO		34.0	35
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	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2549	target-40	TO		TO		TO		126.7	19	9.6	19
2550	target-400	58.2	14	16.0	11	0.2	14	0.7	14	0.0	12
2551	target-401	0.0	5	0.6	2	0.0	5	0.0	5	0.0	2
2552	target-402	29.9	13	5.3	10	TO		0.1	13	3.3	21
2553	target-403	15.7	15	5.5	9	76.7	25	0.1	15	0.1	13
2554	target-404	0.1	7	Error		0.0	11	0.1	9	0.0	12
2555	target-405	97.8	14	18.7	11	0.8	14	0.5	14	0.0	12
2556	target-406	0.1	7	Error		0.0	7	0.0	7	0.0	8
2557	target-407	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2558	target-408	TO		21.0	10	16.1	16	0.3	16	0.0	11
2559	target-409	TO		16.3	11	0.0	14	0.0	14	0.0	11
2560	target-41	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2561	target-410	TO		TO		TO		125.3	22	0.4	30
2562	target-411	TO		TO		TO		TO		109.4	16
2563	target-412	50.4	14	2.0	8	0.3	18	0.1	16	0.0	10
2564	target-413	TO		TO		TO		50.6	22	0.2	17
2565	target-414	TO		TO		TO		TO		0.1	26
2566	target-415	0.0	7	0.7	4	0.0	7	0.0	7	0.0	4
2567	target-416	TO		365.3	12	TO		2.4	19	0.2	12
2568	target-417	TO		Error		TO		2.0	19	0.7	17
2569	target-418	0.0	4	0.5	1	0.0	4	0.0	4	0.0	1
2570	target-419	3.2	12	4.4	9	0.5	22	0.5	13	0.1	10
2571	target-42	TO		TO		TO		0.9	18	0.1	16
2572	target-420	12.3	13	2.5	10	0.5	14	0.1	14	0.0	11
2573	target-421	0.1	10	0.9	7	0.6	19	0.1	10	0.0	10
2574	target-422	0.0	6	0.6	3	0.0	6	0.0	6	0.0	3
2575	target-423	TO		34.2	10	TO		0.6	16	0.0	12
2576	target-424	0.0	6	Error		0.0	10	0.0	6	0.0	7
2577	target-425	TO		171.8	13	TO		0.1	16	0.0	13
2578	target-426	TO		Error		70.3	24	0.5	18	0.1	16
2579	target-427	TO		209.6	11	TO		0.1	17	0.1	15
2580	target-428	6.5	10	1.2	7	0.2	14	0.2	13	0.0	10
2581	target-429	TO		TO		66.0	21	1.4	19	0.0	14
2582	target-43	TO		539.0	12	94.0	18	1.2	18	0.3	17
2583	target-430	185.2	16	33.1	10	0.0	16	0.7	16	0.0	21
2584	target-431	TO		1.8	9	0.6	27	0.8	15	0.0	19
2585	target-432	0.3	10	0.9	7	0.5	14	0.1	11	0.0	9
2586	target-433	TO		TO		105.4	22	4.0	17	0.2	15
2587	target-434	19.2	14	3.6	8	0.3	14	0.4	14	0.0	9
2588	target-435	TO		TO		TO		326.4	21	267.7	31
2589	target-436	TO		63.2	12	0.3	16	0.1	15	0.0	13
2590	target-437	3.3	14	2.8	8	39.0	18	0.6	16	0.0	10
2591	target-438	TO		79.1	11	TO		28.6	17	0.7	11
2592	target-439	TO		TO		TO		2.9	19	0.2	17
2593	target-44	TO		250.0	13	7.6	16	1.0	16	0.0	14
2594	target-440	3.9	14	1.7	8	0.1	24	0.0	15	0.0	9
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	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2598	target-441	2.6	12	Error		2.0	13	0.1	12	0.0	16
2599	target-442	TO		14.0	11	0.1	14	0.1	14	0.0	12
2600	target-443	TO		26.1	10	1.5	17	0.3	16	0.0	10
2603	target-444	1.9	13	1.1	7	0.0	13	0.0	13	0.0	8
2604	target-445	211.4	13	2.8	10	0.5	13	0.3	13	0.0	10
2605	target-446	3.9	13	1.0	7	0.2	13	0.1	13	0.0	7
2606	target-447	4.2	12	1.7	9	TO		0.0	12	0.0	9
2607	target-448	195.4	14	8.9	11	0.7	23	0.6	17	0.0	14
2608	target-449	5.8	10	2.7	7	0.2	10	0.6	10	0.0	8
2609	target-45	TO		TO		38.5	21	1.7	21	0.2	16
2610	target-450	0.9	10	2.2	6	0.4	19	0.5	10	0.0	7
2611	target-451	TO		Error		TO		TO		166.1	42
2612	target-452	0.8	7	2.5	4	0.2	7	0.5	7	0.0	4
2613	target-453	3.4	13	1.0	7	0.0	13	0.1	13	0.0	13
2614	target-454	TO		13.8	11	0.4	14	0.1	14	0.0	11
2615	target-455	TO		102.8	12	0.3	16	1.1	17	0.0	14
2616	target-456	0.0	5	0.6	2	0.0	5	0.0	5	0.0	2
2617	target-457	TO		4.7	10	0.1	19	0.0	13	0.0	10
2618	target-458	TO		TO		52.5	18	0.8	18	0.0	12
2619	target-459	TO		67.1	12	21.4	15	0.4	15	0.0	12
2620	target-46	1.0	8	2.2	5	0.2	8	0.4	8	0.0	5
2621	target-460	TO		365.8	13	TO		0.4	16	0.0	14
2622	target-461	TO		TO		92.7	25	TO		1.5	19
2623	target-462	TO		TO		7.2	23	0.3	18	0.1	13
2624	target-463	TO		203.3	11	0.4	17	0.1	17	0.0	11
2625	target-464	0.1	10	0.9	7	0.1	16	0.0	10	0.0	7
2626	target-465	TO		TO		TO		78.0	20	0.9	17
2627	target-466	0.2	7	Error		0.0	9	0.0	9	0.0	9
2628	target-467	TO		TO		46.1	21	1.7	21	0.7	16
2629	target-468	2.3	11	1.2	8	0.1	16	0.0	11	0.0	10
2630	target-469	1.2	10	5.7	7	0.6	18	0.7	12	0.0	12
2631	target-47	3.2	12	2.1	9	34.3	18	0.5	12	0.1	12
2632	target-470	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2633	target-471	0.0	8	0.7	5	0.1	8	0.0	8	0.0	5
2634	target-472	23.2	15	5.4	9	TO		0.1	16	0.0	10
2635	target-473	0.5	11	1.0	8	1.1	22	0.0	12	0.0	9
2636	target-474	544.7	14	14.0	11	0.7	14	0.2	14	0.0	16
2637	target-475	TO		104.1	11	3.8	23	0.4	17	0.0	11
2638	target-476	TO		429.3	12	TO		50.2	19	0.0	18
2639	target-477	7.2	12	1.4	9	0.0	12	0.0	12	0.0	9
2640	target-478	0.2	9	0.8	6	0.0	9	0.0	9	0.0	6
2641	target-479	TO		72.2	12	255.8	15	5.1	15	0.1	12
2642	target-48	0.0	2	Error		0.0	2	0.0	2	0.0	2
2643	target-480	TO		TO		7.1	19	0.8	19	0.0	13
2644	target-481	0.8	5	2.1	2	0.2	5	0.4	5	0.0	2
2645	target-482	0.0	5	0.6	2	0.0	5	0.0	5	0.0	2
2646											

	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2647	target-483	TO		TO		TO		16.3	19	TO	
2648	target-484	12.6	13	2.5	10	0.0	13	0.0	13	0.0	10
2649	target-485	4.4	11	1.1	8	0.0	11	0.0	11	0.0	8
2650	target-486	4.7	12	1.3	9	0.1	12	0.1	12	0.0	11
2651	target-487	0.1	11	0.8	5	0.0	11	0.0	11	0.0	5
2652	target-488	0.8	4	Error		0.2	4	0.5	4	0.0	4
2653	target-489	104.4	15	2.6	9	0.0	15	0.0	15	0.0	9
2654	target-49	TO		135.9	11	12.4	24	0.8	17	0.0	14
2655	target-490	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2656	target-491	0.9	13	1.0	7	0.3	13	0.1	13	0.0	7
2657	target-492	43.6	14	13.9	11	TO		14.0	14	0.8	11
2658	target-493	10.9	12	1.7	9	0.9	19	4.4	19	0.1	16
2659	target-494	1.4	12	2.0	9	5.7	18	0.6	17	0.0	15
2660	target-495	4.3	12	1.3	9	0.1	12	0.0	12	0.0	9
2661	target-496	TO		TO		100.3	26	21.5	22	0.3	16
2662	target-497	0.9	10	2.3	7	0.3	10	0.5	10	0.0	15
2663	target-498	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2664	target-499	10.9	12	1.6	9	105.6	19	1.5	18	0.1	15
2665	target-5	505.6	17	110.9	11	0.7	17	0.1	17	0.0	11
2666	target-50	86.5	12	1.8	9	0.0	13	0.0	12	0.0	9
2667	target-51	88.6	14	17.4	11	73.8	23	0.1	14	0.3	19
2668	target-52	1.0	2	Error		0.2	2	0.4	2	0.0	2
2669	target-53	0.0	8	0.7	5	0.0	9	0.0	8	0.0	5
2670	target-54	1.0	9	2.5	6	0.2	9	0.3	9	0.0	9
2671	target-55	TO		TO		178.2	28	TO		TO	
2672	target-56	511.7	15	64.5	12	0.8	15	0.4	15	0.0	12
2673	target-57	5.8	12	2.0	9	2.7	12	0.1	14	0.0	11
2674	target-58	0.6	13	1.0	7	0.1	13	0.1	13	0.0	8
2675	target-59	126.9	14	17.3	11	0.4	22	0.5	14	0.0	12
2676	target-6	TO		TO		TO		12.8	16	0.7	13
2677	target-60	3.8	14	1.8	8	0.0	14	0.0	14	0.0	13
2678	target-61	0.1	12	0.9	6	0.3	12	0.0	12	0.0	9
2679	target-62	158.5	14	4.2	10	0.3	13	1.1	13	0.0	10
2680	target-63	TO		8.3	11	98.6	19	8.4	17	0.1	16
2681	target-64	TO		1.5	8	0.2	17	0.1	15	0.0	14
2682	target-65	1.3	13	1.0	7	0.0	13	0.0	13	0.0	7
2683	target-66	445.3	16	26.9	10	TO		0.1	16	0.0	12
2684	target-67	0.4	10	0.8	7	0.3	14	0.1	13	0.0	10
2685	target-68	25.0	14	14.5	11	15.2	23	2.3	14	0.0	11
2686	target-69	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2687	target-7	229.4	13	4.3	10	3.0	14	0.5	14	0.0	15
2688	target-70	TO		TO		TO		1.6	19	0.2	16
2689	target-71	TO		TO		TO		TO		TO	
2690	target-72	0.1	9	0.8	6	0.1	9	0.0	9	0.0	9
2691	target-73	0.3	10	0.9	7	0.0	10	0.0	10	0.0	11
2692	target-74	1.5	11	3.1	8	1.0	12	0.5	12	0.0	10
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2696	Benchmark	CVC4		PROBE		DUET		SIMBA		BITEN	
2697		Time	Size	Time	Size	Time	Size	Time	Size	Time	Size
2698	target-75	0.0	8	0.7	5	0.0	9	0.0	8	0.0	8
2699	target-76	0.0	7	0.7	4	0.0	7	0.0	10	0.0	9
2700	target-77	31.6	15	3.1	9	0.1	15	0.1	15	0.0	9
2701	target-78	0.0	6	0.7	3	0.0	9	0.0	6	0.0	3
2702	target-79	TO		TO		TO		TO		12.8	16
2703	target-8	TO		TO		TO		0.6	18	0.0	18
2704	target-80	3.7	11	1.1	8	0.0	11	0.0	11	0.0	8
2705	target-81	0.0	6	0.7	3	0.0	6	0.0	6	0.0	3
2706	target-82	TO		TO		173.6	22	2.6	21	0.1	15
2707	target-83	TO		Error		99.9	17	1.7	17	0.1	14
2708	target-84	122.4	13	4.3	10	0.5	16	0.0	13	0.0	13
2709	target-85	0.4	9	0.8	6	0.0	17	0.1	12	0.0	9
2710	target-86	TO		TO		TO		TO		210.7	18
2711	target-87	1.9	13	0.9	7	0.2	17	0.1	16	0.0	10
2712	target-88	15.4	15	5.9	9	0.2	18	0.1	17	0.0	14
2713	target-89	3.0	14	2.7	8	1.9	18	0.4	15	0.0	9
2714	target-9	TO		TO		TO		54.8	22	0.3	21
2715	target-90	TO		86.9	12	214.6	20	3.3	15	0.1	12
2716	target-91	TO		TO		TO		TO		33.1	18
2717	target-92	0.0	9	0.7	3	0.0	9	0.0	9	0.0	3
2718	target-93	0.0	10	0.7	4	0.0	11	0.0	11	0.0	5
2719	target-94	9.0	12	1.7	9	0.0	12	0.1	12	0.5	13
2720	target-95	0.9	6	2.3	3	0.2	6	0.5	6	0.0	3
2721	target-96	TO		Error		TO		TO		10.5	15
2722	target-97	0.1	10	0.8	7	0.0	10	0.0	10	0.0	7
2723	target-98	7.6	12	3.3	9	0.9	16	1.6	16	0.0	13
2724	target-99	2.0	12	1.4	9	0.1	12	0.0	12	0.0	10
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