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Pursuing Excellence

No Calculators

Volume 2

WRITTEN BY RON SHAW

EDUCATIONAL EXCELLENCE

THE ACTIVITIES IN THIS BOOK ADDRESS MANY OUTCOMES IN THE SYLLABUS

No Calculators Vol 2 *(for ages 11+)*
Intelligent Australia Productions

First published in 2008 by Intelligent Australia Productions

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ISBN 978-0-9804341-6-3

IAP 027

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Note to Teachers

This book contains some examples that are the same as those in 'No Calculators Vol 1', written for ages 8-10. There are more examples in this book and there are some questions with a higher level of difficulty.

Dedicated to Casey

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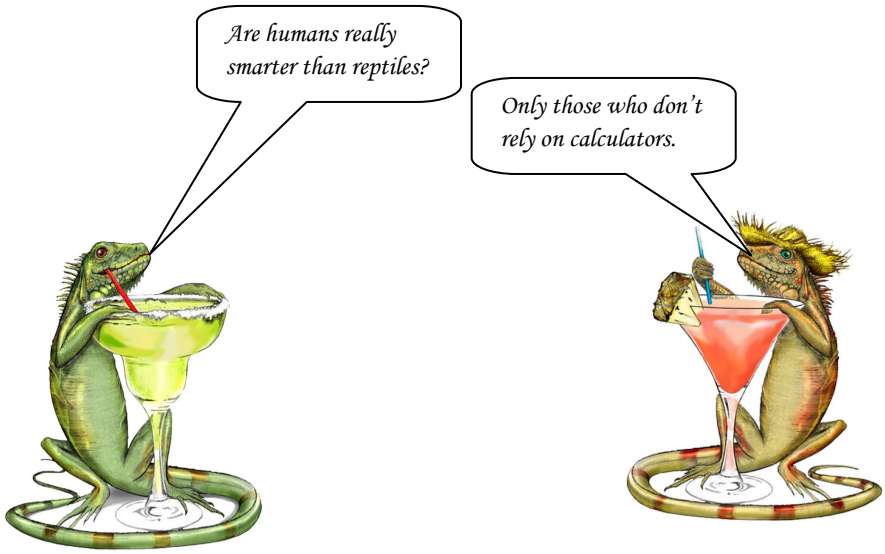
Teachers Notes

There's an Australian saying, "I'm flat out like a lizard drinking".

As it happened, two of our reptilian cousins were philosophising one day –over a drink of course- wondering whether the human brain had indeed (as they'd heard) evolved beyond the more primitive level of their own.
One commented that humans were brainy enough to invent calculators, machines that could not only perform the work of human brains but do it more quickly and with unfailing accuracy.
To which the other retorted, "How brainy is it to invent something that stops you using your brain?"

This was an interesting observation, one that called upon yet more philosophising - over a drink of course.



Someone once asked me if I thought calculators were a good invention.
"Not *good*," I replied, "……marvellous."

My enquirer, one who knows that I cringe whenever any of my year 12 students reaches for their calculator for even the simplest computation, was befuddled.
I explained that calculators were created to complement -not replace- the brain. To accomplish what they're designed for, they're brilliant. But if they're over-used, employed when they're not really needed or used as a crutch, they make us lazy.

Human brains (especially developing ones) benefit from exercise; when we make calculations the neurones in the maths parts of our brain are given a 'work out' (not unlike our hearts and lungs when we undertake aerobic activities, or our muscles when we do strength and conditioning exercises).

So, when *should* we use calculators?
Use them as a last resort, for complex or difficult problems.
But for the basics of addition, subtraction, multiplication and division, use your brain.

continued

Teachers Notes *continued*

This book has been designed to provide consolidation in the 4 mathematical operations (addition, subtraction, multiplication and division).
As the title suggests, calculators should not be used.

Maths is about two things, accuracy and speed.
Usually (but not always) 'a miss is as good as a mile' applies to maths (the exceptions being *estimating* and *approximations*).
In maths –unlike in subjects that ask for views and opinions- accuracy is vital.

But how important, in maths, is speed?
The answer of course is....*extremely important* (though accuracy comes first by a long way).
Let's face it, there are many real-life situations where on-the-spot maths calculations are required.
And sometimes there's only a limited amount of time in which to come up with the correct answer.
Examples:

- *checking your change before the next person in the queue is served*
- *working out how long you have in which to get ready in time for the next bus (and you're in a hurry)*
- *being asked how many points you scored altogether in your last two basketball matches*

and so on.

Two people, A and B, sit a maths test.
A completes the test in 20 minutes while B takes 60 minutes to finish the test.
Both A and B score 100%. Who, A or B, is better at maths?

With the above in mind it is suggested that a time limit be set for each of the worksheets that follow.
What is the best time limit?

My own tests have shown that if the class knows that 'time's up' occurs when, say, just three students have completed all examples, everyone will work as fast as they can. Sure, most won't complete the sheet and there will be those who don't get too many done at all. But should this be of concern? No.
The issue at hand is speed.....training the brain to make calculations as fast as possible....getting all those maths neurones, with their complex networks and connections, firing as rapidly as possible, helping to strengthen and condition the areas of the brain involved in maths computations.
Sound familiar? Yes, there are indeed strong parallels to a PE lesson.
Brain cells, like muscle cells, need nourishing and will stagnate if not used.
An exercised brain is a healthy brain.

So, good luck.....and remember.....*no calculators*.

Ron Shaw

Ron Shaw has written more than 50 books for teachers and their students.
He is a member of the Australian Association of Mathematics Teachers.

Note
Some of the examples in this book are the same as those in No Calculators Vol 1 *(for ages 8-10)*.
This volume has more examples and, in some cases, new concepts are covered.

Addition

Basic facts to 18

1 2 + 4	2 5 + 5	3 6 + 4	4 8 + 8	5 4 + 5
6 2 + 8	7 8 + 4	8 4 + 4	9 2 + 9	10 7 + 2
11 4 + 9	12 6 + 8	13 7 + 7	14 3 + 6	15 3 + 7
16 8 + 3	17 1 + 8	18 3 + 3	19 6 + 5	20 7 + 5
21 5 + 8	22 9 + 9	23 3 + 9	24 7 + 2	25 3 + 5
26 4 + 7	27 3 + 3	28 6 + 5	29 2 + 9	30 6 + 9
31 9 + 8	32 6 + 3	33 9 + 3	34 4 + 3	35 5 + 7
36 8 + 7	37 2 + 6	38 4 + 6	39 4 + 5	40 9 + 6
41 7 + 9	42 6 + 7	43 9 + 7	44 6 + 8	45 8 + 5
46 9 + 4	47 4 + 8	48 5 + 6	49 7 + 6	50 7 + 7

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Addition

Three and more 1-digit Addends

1 5 4 + 8	**2** 7 3 + 5	**3** 2 4 + 6	**4** 8 3 + 4	**5** 3 9 + 2
6 8 3 + 8	**7** 7 9 + 4	**8** 5 5 + 3	**9** 9 1 + 7	**10** 1 3 + 9
11 8 8 + 8	**12** 4 5 + 6	**13** 1 9 + 1	**14** 6 2 + 7	**15** 5 9 + 8
16 6 4 2 + 3	**17** 8 2 1 + 9	**18** 4 7 7 + 1	**19** 3 3 9 + 5	**20** 8 3 8 + 1
21 4 2 8 + 6	**22** 5 3 5 + 5	**23** 1 1 7 + 6	**24** 4 8 3 + 9	**25** 1 9 9 + 6
26 4 4 7 + 7	**27** 3 8 1 + 7	**28** 8 2 9 + 4	**29** 9 9 5 + 2	**30** 8 3 9 + 1
31 7 6 7 4 + 2	**32** 5 1 3 9 + 4	**33** 8 4 5 1 + 4	**34** 3 8 1 4 + 5	**35** 2 8 1 1 + 6
36 9 2 3 2 + 7	**37** 3 4 1 8 + 5	**38** 3 2 8 2 + 1	**39** 4 7 5 2 + 9	**40** 5 3 7 9 + 1

Addition

Two 2-digit Addends (no carrying)

1	2	3	4	5
35 + 42	27 + 51	36 + 23	64 + 35	52 + 34
6	7	8	9	10
17 + 60	42 + 46	65 + 23	64 + 20	43 + 43
11	12	13	14	15
36 + 61	34 + 34	53 + 32	71 + 13	65 + 33
16	17	18	19	20
44 + 33	56 + 23	18 + 81	23 + 55	37 + 42
21	22	23	24	25
47 + 12	37 + 22	52 + 22	60 + 24	42 + 36
26	27	28	29	30
34 + 43	16 + 23	73 + 22	61 + 15	67 + 22
31	32	33	34	35
43 + 45	55 + 13	84 + 14	46 + 12	43 + 34
36	37	38	39	40
28 + 31	53 + 26	26 + 31	42 + 13	19 + 60
41	42	43	44	45
70 + 26	25 + 24	33 + 24	84 + 13	25 + 44

Addition

Two 2-digit Addends (carrying required)

1 47 + 38	2 49 + 26	3 26 + 36	4 19 + 57	5 76 + 14
6 54 + 28	7 61 + 19	8 37 + 27	9 49 + 19	10 32 + 49
11 29 + 45	12 63 + 18	13 46 + 46	14 51 + 29	15 28 + 44
16 43 + 17	17 74 + 19	18 28 + 18	19 35 + 15	20 63 + 27
21 55 + 28	22 57 + 39	23 36 + 17	24 63 + 28	25 53 + 19
26 30 + 89	27 67 + 42	28 76 + 33	29 54 + 55	30 38 + 81
31 67 + 52	32 45 + 64	33 65 + 53	34 37 + 71	35 29 + 80
36 56 + 67	37 78 + 45	38 76 + 85	39 87 + 74	40 93 + 19
41 65 + 56	42 76 + 77	43 67 + 48	44 74 + 56	45 79 + 39

Addition

Three and more 2-digit Addends (no carrying)

1	**2**	**3**	**4**	**5**
43	34	13	23	40
21	13	12	23	23
+ 20	+ 21	+ 42	+ 12	+ 10
6	**7**	**8**	**9**	**10**
33	30	32	51	34
23	20	25	16	22
+ 12	+ 19	+ 21	+ 22	+ 21
11	**12**	**13**	**14**	**15**
12	23	24	17	15
23	15	13	20	31
11	30	30	30	31
+ 32	+ 21	+ 32	+ 11	+ 12
16	**17**	**18**	**19**	**20**
22	23	22	14	24
11	23	32	13	10
33	23	30	50	13
+ 11	+ 20	+ 14	+ 21	+ 11
21	**22**	**23**	**24**	**25**
14	22	23	12	12
12	22	10	23	13
12	11	20	10	31
40	11	13	24	20
+ 11	+ 12	+ 22	+ 20	+ 12
26	**27**	**28**	**29**	**30**
10	21	12	21	15
11	30	20	12	30
12	20	20	12	30
12	15	10	30	10
+ 41	+ 12	+ 13	+ 11	+ 11

Addition

Three and more 2-digit Addends (carrying required)

1	**2**	**3**	**4**	**5**
37	54	29	12	28
16	22	40	14	18
+ 34	+ 19	+ 13	+ 65	+ 37
6	**7**	**8**	**9**	**10**
42	17	43	11	31
24	27	13	32	21
+ 29	+ 37	+ 28	+ 37	+ 39
11	**12**	**13**	**14**	**15**
16	23	42	34	30
26	15	13	14	12
16	20	15	24	15
+ 26	+ 18	+ 11	+ 14	+ 19
16	**17**	**18**	**19**	**20**
41	15	38	37	38
20	75	48	17	19
35	15	18	16	43
+ 25	+ 19	+ 28	+ 56	+ 44
21	**22**	**23**	**24**	**25**
17	21	18	19	21
16	14	17	20	12
15	16	10	11	13
14	20	22	18	11
+ 13	+ 18	+ 19	+ 24	+ 24
26	**27**	**28**	**29**	**30**
33	46	63	67	29
22	54	46	67	19
14	17	75	50	39
23	18	80	67	79
+ 43	+ 53	+ 37	+ 47	+ 45

Addition

Two 3-digit Addends (no carrying)

1 \$1.25 + \$2.30	2 530 ml + 253 ml	3 236 kg + 543 kg	4 \$4.60 + \$4.35	5 548 m + 231 m
6 237 km + 431 km	7 236 kg + 543 kg	8 \$3.55 + \$5.40	9 286 ml + 712 ml	10 530 km + 264 km
11 \$2.40 + \$7.30	12 326 days + 512 days	13 435 kg + 354 kg	14 473 g + 421 g	15 763 km + 126 km
16 804 ml + 173 ml	17 \$6.45 + \$1.30	18 556 km + 343 km	19 573 kg + 312 kg	20 \$4.20 + \$4.55
21 337 m + 261 m	22 462 km + 305 km	23 \$5.85 + \$2.10	24 226 ml + 761 ml	25 459 km + 220 km
26 \$4.15 + \$4.50	27 556 kg + 343 kg	28 538 km + 261 km	29 \$7.70 + \$2.15	30 324 days + 465 days
31 618 ml + 260 ml	32 384 km + 404 km	33 \$2.30 + \$6.50	34 129 m + 720 m	35 363 kg + 535 kg
36 571 km + 206 km	37 463 kg + 326 kg	38 447 ml + 351 ml	39 \$2.40 + \$3.30	40 568 km + 220 km
41 \$6.65 + \$1.30	42 384 m + 404 m	43 517 km + 240 km	44 335 ml + 452 ml	45 482 kg + 315 kg

Addition

Two 3-digit Addends (carrying required)

1 \$4.65 + \$3.45	2 268 ml + 427 ml	3 457 kg + 439 kg	4 \$2.75 + \$6.05	5 278 m + 318 m
6 458 km + 356 km	7 547 kg + 297 kg	8 \$5.65 + \$1.65	9 526 ml + 187 ml	10 458 km + 387 km
11 \$1.70 + \$5.80	12 567 days + 386 days	13 296 kg + 296 kg	14 188 g + 649 g	15 566 km + 266 km
16 755 ml + 155 ml	17 \$5.65 + \$2.75	18 665 km + 168 km	19 489 kg + 295 kg	20 \$7.85 + \$1.55
21 447 m + 268 m	22 395 km + 265 km	23 \$4.75 + \$2.55	24 356 ml + 655 ml	25 366 km + 577 km
26 \$6.85 + \$5.85	27 758 kg + 658 kg	28 432 km + 599 km	29 \$7.95 + \$9.05	30 768 days + 699 days
31 755 ml + 655 ml	32 898 km + 108 km	33 \$9.25 + \$0.75	34 785 m + 216 m	35 999 kg + 444 kg
36 706 km + 694 km	37 643 kg + 557 kg	38 659 ml + 548 ml	39 \$5.45 + \$4.55	40 407 km + 593 km
41 \$8.75 + \$6.75	42 434 m + 874 m	43 368 km + 899 km	44 698 ml + 508 ml	45 999 kg + 999 kg

Subtraction

Basic facts: 1 & 2-digit minuend, 1-digit subtrahend

1 9 − 3	2 4 − 2	3 2 − 2	4 8 − 5	5 5 − 3
6 3 − 1	7 7 − 6	8 6 − 5	9 9 − 2	10 4 − 1
11 2 − 1	12 8 − 4	13 5 − 2	14 3 − 3	15 7 − 5
16 6 − 4	17 9 − 1	18 4 − 3	19 8 − 3	20 5 − 1
21 3 − 2	22 7 − 4	23 6 − 3	24 9 − 8	25 8 − 2
26 5 − 4	27 7 − 3	28 6 − 2	29 9 − 7	30 8 − 1
31 7 − 2	32 6 − 1	33 9 − 6	34 8 − 7	35 7 − 1
36 9 − 5	37 8 − 6	38 9 − 4	39 18 − 9	40 16 − 8
41 17 − 9	42 11 − 4	43 13 − 6	44 14 − 7	45 12 − 8
46 10 − 3	47 15 − 8	48 12 − 5	49 13 − 4	50 11 − 3

Subtraction

2-digit minuend, 1 and 2-digit subtrahend (no borrowing)

1	2	3	4	5
56 - 44	75 - 30	36 - 4	68 - 22	78 - 35
6	7	8	9	10
58 - 7	72 - 61	84 - 42	39 - 7	46 - 3
11	12	13	14	15
67 - 20	88 - 5	67 - 23	59 - 21	63 - 31
16	17	18	19	20
87 - 45	99 - 36	95 - 3	26 - 3	17 - 6
21	22	23	24	25
66 - 33	81 - 11	45 - 5	34 - 13	45 - 23
26	27	28	29	30
69 - 44	65 - 30	68 - 17	66 - 5	53 - 12
31	32	33	34	35
94 - 51	68 - 7	47 - 31	68 - 25	82 - 21
36	37	38	39	40
37 - 15	58 - 6	49 - 4	56 - 43	55 - 44
41	42	43	44	45
48 - 31	18 - 5	27 - 6	45 - 34	18 - 8
46	47	48	49	50
27 - 3	69 - 5	73 - 21	56 - 22	38 - 6

Subtraction

2-digit minuend, 1 & 2-digit subtrahend (borrowing required)

1	73 - 29	2	46 - 17	3	50 - 4	4	72 - 57	5	24 - 9
6	42 - 4	7	56 - 28	8	83 - 48	9	41 - 6	10	55 - 8
11	83 - 26	12	72 - 8	13	44 - 27	14	65 - 17	15	90 - 26
16	81 - 44	17	93 - 37	18	91 - 7	19	43 - 9	20	53 - 8
21	64 - 28	22	80 - 11	23	44 - 9	24	32 - 18	25	54 - 29
26	78 - 39	27	66 - 38	28	60 - 17	29	63 - 7	30	44 - 15
31	92 - 56	32	64 - 6	33	40 - 31	34	65 - 26	35	80 - 29
36	32 - 27	37	53 - 6	38	44 - 7	39	55 - 37	40	44 - 16
41	63 - 39	42	37 - 8	43	36 - 9	44	41 - 36	45	27 - 8
46	32 - 4	47	64 - 9	48	77 - 28	49	53 - 28	50	33 - 6

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Subtraction

3-digit minuend, 2 and 3-digit subtrahend (no borrowing)

1	2	3	4	5
452 - 231	758 - 45	794 - 174	804 - 601	773 - 51
6	7	8	9	10
707 - 305	553 - 20	784 - 453	999 - 74	384 - 70
11	12	13	14	15
875 - 63	798 - 756	908 - 402	645 - 445	453 - 42
16	17	18	19	20
649 - 431	784 - 351	794 - 73	879 - 57	394 - 64
21	22	23	24	25
674 - 543	576 - 66	274 - 132	974 - 42	854 - 542
26	27	28	29	30
885 - 55	749 - 449	453 - 42	897 - 97	792 - 462
31	32	33	34	35
330 - 310	459 - 39	669 - 426	438 - 34	226 - 206
36	37	38	39	40
658 - 37	878 - 468	547 - 46	388 - 168	361 - 61
41	42	43	44	45
419 - 206	413 - 11	442 - 102	699 - 90	646 - 136

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Subtraction

3-digit minuend, 2 & 3-digit subtrahend (borrowing required)

1	2	3	4	5
562 - 348	437 - 29	684 - 269	650 - 223	642 - 33
6	7	8	9	10
363 - 139	452 - 37	466 - 148	365 - 47	578 - 69
11	12	13	14	15
693 - 55	585 - 246	381 - 202	491 - 268	536 - 29
16	17	18	19	20
521 - 318	545 - 228	623 - 17	458 - 49	467 - 38
21	22	23	24	25
990 - 486	648 - 29	490 - 245	664 - 19	376 - 138
26	27	28	29	30
668 - 87	529 - 449	604 - 42	637 - 56	700 - 210
31	32	33	34	35
760 - 483	210 - 48	700 - 458	800 - 89	600 - 197
36	37	38	39	40
971 - 83	563 - 199	476 - 88	570 - 391	485 - 86
41	42	43	44	45
500 - 199	600 - 23	701 - 422	504 - 88	513 - 296

Subtraction

4, 5, 6 and 7-digit minuends 4, 5, 6 and 7-digit subtrahends
(no borrowing)

1	2	3	4
3 758 - 1 432	4 689 - 2 406	1 543 - 1 012	5 628 - 2 417
5	6	7	8
4 067 - 2 045	7 896 - 4 023	5 089 - 2 067	4 145 - 4 042
9	10	11	12
55 465 - 32 034	26 108 - 15 107	34 563 - 13 430	67 482 - 21 341
13	14	15	16
66 342 - 43 030	59 909 - 38 702	90 015 - 70 003	76 306 - 35 204
17	18	19	20
452 087 - 231 057	563 673 - 212 421	856 014 - 543 012	532 501 - 411 001
21	22	23	24
727 479 - 120 123	899 099 - 609 078	277 034 - 156 033	469 469 - 156 264
25	26	27	28
7 462 126 - 3 341 003	2 100 563 - 1 000 040	4 067 864 - 1 056 043	9 586 849 - 3 056 014
29	30	31	32
8 669 034 - 2 532 022	6 648 722 - 4 234 521	5 799 933 - 2 456 003	2 494 333 - 1 340 213
33	34	35	36
5 674 058 - 620 005	8 724 643 - 3 421	2 003 587 - 2 002 532	3 758 612 - 30 401

Subtraction

4, 5, 6 and 7-digit minuends 4, 5, 6 and 7-digit subtrahends
(borrowing required)

1	4 852 − 2 316	2	9 567 − 3 548
3	4 026 − 2 019	4	9 476 − 1 499
5	8 747 − 5 729	6	4 655 − 1 438
7	6 357 − 4 149	8	6 522 − 3 327
9	63 465 − 12 089	10	43 442 − 12 367
11	53 456 − 22 088	12	74 176 − 43 099
13	53 356 − 21 189	14	65 577 − 14 398
15	24 178 − 12 099	16	58 268 − 24 179
17	432 023 − 101 256	18	548 268 − 135 799
19	575 175 − 251 488	20	987 044 − 266 778
21	543 255 − 334 578	22	943 467 − 157 789
23	650 034 − 421 167	24	656 200 − 439 514
25	5 436 700 − 1 469 877	26	4 612 412 − 2 438 686
27	5 223 100 − 3 156 939	28	7 541 002 − 2 288 996
29	6 010 020 − 1 342 567	30	7 000 743 − 5 243 889
31	6 520 000 − 3 687 741	32	6 400 000 − 3 711 237
33	7 000 000 − 521 569	34	9 000 000 − 4 111
35	5 000 000 − 1 212 111	36	1 000 000 − 41 738

Addition & Subtraction

Review

1	2	3	4	5
346 + 378	809 + 474	545 + 859	602 + 578	679 + 794
6	7	8	9	10
45 74 32 + 48	88 52 69 + 21	58 52 28 + 77	64 99 65 + 64	43 27 83 + 62
11	12	13	14	15
56 22 68 94 + 29	12 88 94 99 + 22	33 48 75 89 + 23	53 78 88 63 + 53	84 39 84 23 + 60
16	17	18	19	20
73 - 27	90 - 48	55 - 18	63 - 39	40 - 26
21	22	23	24	25
532 - 278	645 - 89	630 - 279	500 - 396	600 - 467
26	27	28	29	30
6 758 - 1 789	7 600 - 3 863	9 496 - 2 678	7 777 - 1 969	4 000 - 3 204
31	32	33	34	35
57 467 - 29 768	70 056 - 20 789	30 001 - 19 442	50 002 - 27 888	10 000 - 7 909
36	37	38	39	40
375 674 - 128 809	901 006 - 123 088	512 801 - 318 338	200 012 - 123 664	600 000 - 278 992
41	42	43	44	45
5 012 300 - 2 132 889	7 000 134 - 3 884 012	4 002 001 - 1 999 393	4 993 112 - 2 880 228	9 000 003 - 2 004 009
46	47	48	49	50
5 000 000 - 1 999 999	3 700 100 - 1 699 099	4 000 101 - 3 001 090	4 576 002 - 2 947 102	6 234 000 - 4 990 028

Multiplication

Basic facts: Times Tables to 10 x 10

1	9	2	10	3	5	4	7	5	0	6	8	7	0	8	9
	× 0		× 8		× 2		× 5		× 6		× 2		× 1		× 5
9	6	10	10	11	5	12	5	13	9	14	10	15	5	16	2
	× 6		× 4		× 7		× 3		× 8		× 9		× 6		× 4
17	6	18	4	19	2	20	2	21	7	22	9	23	4	24	6
	× 7		× 3		× 8		× 9		× 6		× 4		× 7		× 3
25	8	26	9	27	4	28	3	29	7	30	7	31	3	32	3
	× 8		× 9		× 6		× 4		× 7		× 3		× 8		× 9
33	8	34	8	35	3	36	8	37	7	38	8	39	7	40	3
	× 6		× 4		× 7		× 3		× 8		× 9		× 2		× 6
41	4	42	8	43	3	44	4	45	4	46	4	47	9	48	7
	× 4		× 7		× 3		× 8		× 9		× 2		× 6		× 4
49	2	50	9	51	6	52	7	53	6	54	2	55	5	56	9
	× 7		× 3		× 8		× 9		× 2		× 6		× 4		× 7
57	2	58	10	59	5	60	5	61	3	62	10	63	0	64	6
	× 3		× 10		× 8		× 9		× 2		× 6		× 3		× 4
65	0	66	10	67	10	68	0	69	6	70	9	71	1	72	10
	× 7		× 5		× 3		× 8		× 9		× 2		× 0		× 0

Multiplication

1-digit multiplier 2, 3 and 4-digit multiplicands (no carrying)

1	2	3	4	5	6
23 × 3	12 × 4	32 × 2	42 × 2	33 × 3	22 × 4
7	8	9	10	11	12
312 × 2	123 × 3	212 × 4	123 × 2	213 × 3	112 × 4
13	14	15	16	17	18
213 × 2	103 × 3	201 × 4	301 × 2	312 × 3	120 × 4
19	20	21	22	23	24
3 210 × 2	1 203 × 3	2 201 × 4	1 203 × 2	3 201 × 3	1 222 × 4
25	26	27	28	29	30
2 310 × 2	2 031 × 3	1 212 × 4	4 321 × 2	3 332 × 3	1 002 × 4
31	32	33	34	35	36
2 314 × 2	2 223 × 3	1 200 × 4	3 142 × 2	2 031 × 3	1 112 × 4
37	38	39	40	41	42
4 003 × 2	3 012 × 3	1 102 × 4	4 040 × 2	3 330 × 3	2 222 × 4
43	44	45	46	47	48
3 100 × 2	2 030 × 3	2 221 × 4	4 200 × 2	3 112 × 3	2 001 × 4
49	50	51	52	53	54
1 443 × 2	1 113 × 3	2 121 × 4	3 441 × 2	2 303 × 3	2 010 × 4

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Multiplication

1-digit multiplier 2, 3 and 4-digit multiplicands (carrying required)

1	35 × 4	2	43 × 5	3	26 × 2
4	46 × 3	5	72 × 5	6	48 × 5
7	406 × 4	8	530 × 5	9	374 × 3
10	509 × 5	11	188 × 2	12	569 × 2
13	321 × 7	14	406 × 6	15	109 × 8
16	402 × 9	17	902 × 7	18	765 × 6
19	2 006 × 5	20	6 091 × 2	21	4 218 × 3
22	4 099 × 2	23	4 287 × 3	24	2 806 × 5
25	2 451 × 9	26	7 092 × 7	27	3 800 × 8
28	9 213 × 6	29	6 009 × 9	30	4 140 × 7
31	5 008 × 9	32	3 092 × 2	33	1 739 × 8
34	3 900 × 3	35	5 729 × 7	36	5 129 × 4
37	1 290 × 6	38	2 097 × 5	39	9 782 × 2
40	8 219 × 9	41	5 670 × 7	42	2 807 × 8
43	7 900 × 4	44	1 687 × 3	45	6 866 × 9
46	8 756 × 2	47	6 091 × 6	48	9 678 × 5
49	3 675 × 8	50	4 562 × 7	51	1 009 × 2
52	4 536 × 9	53	2 118 × 4	54	9 458 × 3

Multiplication

2-digit multiplier 2, 3 and 4-digit multiplicands (no carrying)

1	2	3	4	5	6
32 x 23	22 x 31	12 x 42	30 x 32	21 x 24	22 x 33
7	8	9	10	11	12
123 x 12	133 x 20	320 x 13	142 x 21	302 x 30	134 x 22
13	14	15	16	17	18
132 x 31	121 x 24	112 x 43	131 x 32	120 x 34	321 x 23
19	20	21	22	23	24
2 320 x 33	4 343 x 20	1 200 x 43	2 113 x 31	2 121 x 24	2 341 x 21
25	26	27	28	29	30
2 043 x 12	1 202 x 34	3 320 x 32	3 322 x 13	4 203 x 21	1 300 x 23
31	32	33	34	35	36
1 303 x 20	1 301 x 33	1 201 x 42	1 302 x 30	3 321 x 31	2 333 x 12

Multiplication

2-digit multiplier 2, 3 and 4-digit multiplicands (carrying required)

1	2	3	4	5	6
53 x 34	23 x 56	73 x 25	83 x 54	39 x 45	80 x 59
7	8	9	10	11	12
605 x 34	700 x 54	532 x 55	900 x 43	378 x 50	855 x 64
13	14	15	16	17	18
765 x 78	638 x 94	397 x 67	842 x 41	539 x 86	947 x 74
19	20	21	22	23	24
5 403 x 35	3 450 x 43	2 542 x 55	5 455 x 54	5 199 x 42	4 045 x 53
25	26	27	28	29	30
4 186 x 97	3 179 x 68	6 780 x 29	4 539 x 82	9 764 x 79	8 759 x 63
31	32	33	34	35	36
4 567 x 20	2 678 x 33	4 538 x 42	9 860 x 30	5 437 x 31	8 659 x 12

Multiplication

3-digit multiplier 3-digit multiplicand (no carrying)

1 213 x 302	2 142 x 122	3 220 x 404	4 312 x 231	5 443 x 212	6 302 x 123
7 202 x 444	8 313 x 212	9 243 x 220	10 212 x 343	11 414 x 222	12 333 x 210
13 402 x 112	14 234 x 212	15 403 x 102	16 341 x 122	17 243 x 220	18 200 x 414
19 333 x 300	20 411 x 200	21 124 x 202	22 214 x 222	23 123 x 321	24 203 x 302
25 444 x 222	26 313 x 131	27 130 x 320	28 403 x 202	29 440 x 220	30 412 x 212

Multiplication

3-digit multiplier 3-digit multiplicand (carrying required)

1 543 x 435	2 234 x 502	3 304 x 215	4 250 x 430	5 541 x 340	6 241 x 305
7 749 x 362	8 506 x 798	9 530 x 753	10 420 x 980	11 753 x 489	12 253 x 607
13 689 x 503	14 642 x 497	15 742 x 389	16 862 x 689	17 804 x 237	18 806 x 793
19 638 x 617	20 600 x 800	21 651 x 705	22 809 x 764	23 726 x 438	24 963 x 789
25 999 x 222	26 700 x 438	27 798 x 600	28 753 x 289	29 809 x 125	30 987 x 987

Division

Basic facts: Times Tables to 100 ÷ 10

1 50 ÷ 5 =	2 0 ÷ 4 =	3 30 ÷ 6 =	4 49 ÷ 7 =
5 6 ÷ 3 =	6 72 ÷ 8 =	7 20 ÷ 2 =	8 70 ÷ 10 =
9 36 ÷ 9 =	10 10 ÷ 5 =	11 40 ÷ 4 =	12 36 ÷ 6 =
13 28 ÷ 7 =	14 15 ÷ 3 =	15 16 ÷ 8 =	16 0 ÷ 2 =
17 0 ÷ 10 =	18 27 ÷ 9 =	19 45 ÷ 5 =	20 8 ÷ 4 =
21 24 ÷ 6 =	22 56 ÷ 7 =	23 27 ÷ 3 =	24 24 ÷ 8 =
25 10 ÷ 2 =	26 100 ÷ 10 =	27 81 ÷ 9 =	28 15 ÷ 5 =
29 36 ÷ 4 =	30 42 ÷ 6 =	31 21 ÷ 7 =	32 21 ÷ 3 =
33 64 ÷ 8 =	34 12 ÷ 2 =	35 20 ÷ 10 =	36 18 ÷ 9 =
37 40 ÷ 5 =	38 12 ÷ 4 =	39 18 ÷ 6 =	40 63 ÷ 7 =
41 12 ÷ 3 =	42 32 ÷ 8 =	43 18 ÷ 2 =	44 90 ÷ 10 =
45 72 ÷ 9 =	46 20 ÷ 5 =	47 32 ÷ 4 =	48 48 ÷ 6 =
49 14 ÷ 7 =	50 18 ÷ 3 =	51 72 ÷ 8 =	52 4 ÷ 2 =
53 40 ÷ 10 =	54 63 ÷ 9 =	55 35 ÷ 5 =	56 16 ÷ 4 =
57 12 ÷ 6 =	58 35 ÷ 7 =	59 9 ÷ 3 =	60 40 ÷ 8 =
61 16 ÷ 2 =	62 80 ÷ 10 =	63 54 ÷ 9 =	64 25 ÷ 5 =
65 28 ÷ 4 =	66 54 ÷ 6 =	67 0 ÷ 7 =	68 10 ÷ 2 =
69 0 ÷ 8 =	70 6 ÷ 2 =	71 30 ÷ 10 =	72 90 ÷ 9 =
73 30 ÷ 5 =	74 20 ÷ 4 =	75 0 ÷ 6 =	76 42 ÷ 7 =
77 0 ÷ 3 =	78 80 ÷ 8 =	79 14 ÷ 2 =	80 50 ÷ 10 =
81 45 ÷ 9 =	82 0 ÷ 5 =	83 24 ÷ 4 =	84 60 ÷ 6 =

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Division

1 and 2-digit dividend 1-digit divisor (remainders)

1	5 | 9	2	2 | 3	3	3 | 5	4	4 | 7	5	6 | 8	6	8 | 9
7	7 | 9	8	9 | 11	9	5 | 7	10	2 | 9	11	3 | 7	12	4 | 11
13	6 | 11	14	8 | 14	15	7 | 13	16	9 | 28	17	5 | 8	18	4 | 9
19	2 | 7	20	3 | 13	21	4 | 19	22	6 | 16	23	8 | 27	24	7 | 29
25	9 | 53	26	5 | 13	27	2 | 13	28	3 | 17	29	4 | 26	30	6 | 27
31	8 | 43	32	7 | 40	33	9 | 70	34	5 | 23	35	2 | 19	36	3 | 23
37	4 | 38	38	6 | 51	39	8 | 70	40	7 | 50	41	9 | 84	42	5 | 44
43	2 | 21	44	3 | 34	45	4 | 43	46	6 | 63	47	8 | 67	48	7 | 3
49	9 | 98	50	5 | 84	51	2 | 23	52	3 | 32	53	4 | 51	54	6 | 80
55	8 | 84	56	7 | 75	57	9 | 93	58	5 | 72	59	2 | 31	60	3 | 40
61	4 | 82	62	6 | 91	63	8 | 89	64	7 | 83	65	9 | 95	66	5 | 51
67	2 | 41	68	3 | 71	69	4 | 93	70	6 | 99	71	8 | 92	72	7 | 99

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Division

3-digit dividend 1-digit divisor
(no remainders)

1	5 | 505	2	2 | 242	3	3 | 639	4	4 | 608	5	6 | 606	6	8 | 904
7	7 | 903	8	9 | 909	9	5 | 300	10	2 | 312	11	3 | 930	12	4 | 700
13	6 | 900	14	8 | 816	15	7 | 854	16	9 | 900	17	5 | 725	18	4 | 412
19	2 | 506	20	3 | 312	21	4 | 664	22	6 | 714	23	8 | 808	24	7 | 763
25	9 | 423	26	5 | 985	27	2 | 608	28	3 | 423	29	4 | 900	30	6 | 876
31	8 | 992	32	7 | 812	33	9 | 171	34	5 | 375	35	2 | 432	36	3 | 450
37	4 | 532	38	6 | 774	39	8 | 936	40	7 | 924	41	9 | 306	42	5 | 460
43	2 | 198	44	3 | 285	45	4 | 496	46	6 | 510	47	8 | 576	48	7 | 602
49	9 | 234	50	5 | 215	51	2 | 176	52	3 | 198	53	4 | 372	54	6 | 402
55	8 | 392	56	7 | 322	57	9 | 405	58	5 | 185	59	2 | 104	60	3 | 297
61	4 | 308	62	6 | 132	63	8 | 504	64	7 | 238	65	9 | 612	66	5 | 270
67	2 | 176	68	3 | 714	69	4 | 188	70	6 | 504	71	8 | 104	72	7 | 105

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Division

3-digit dividend 1-digit divisor (remainders)

1	5	607	2	2	341	3	3	430	4	4	603	5	6	701	6	8	803
7	7	811	8	9	903	9	5	307	10	2	301	11	3	667	12	4	563
13	6	911	14	8	825	15	7	871	16	9	910	17	5	703	18	4	423
19	2	533	20	3	310	21	4	603	22	6	777	23	8	831	24	7	789
25	9	458	26	5	973	27	2	623	28	3	403	29	4	995	30	6	871
31	8	901	32	7	888	33	9	170	34	5	312	35	2	773	36	3	424
37	4	581	38	6	705	39	8	911	40	7	900	41	9	340	42	5	457
43	2	177	44	3	265	45	4	409	46	6	529	47	8	555	48	7	640
49	9	238	50	5	288	51	2	179	52	3	100	53	4	346	54	6	411
55	8	385	56	7	300	57	9	411	58	5	199	59	2	111	60	3	281
61	4	319	62	6	185	63	8	599	64	7	244	65	9	659	66	5	253
67	2	155	68	3	746	69	4	165	70	6	544	71	8	167	72	7	188

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Division

4, 5, 6 and 7-digit dividends 1-digit divisors
(no remainders)

1	5	7 010	2	2	3 114	3	3	4 353	4	4	7 008
5	7	9 023	6	9	9 108	7	5	2 115	8	2	5 562
9	6	9 114	10	8	8 112	11	7	8 148	12	9	9 801
13	2	5 638	14	3	3 108	15	4	6 112	16	6	7 884
17	9	46 017	18	5	91 155	19	2	68 100	20	3	40 131
21	8	9 232	22	7	83 447	23	9	12 006	24	5	10 235
25	4	50 008	26	6	71 004	27	8	90 016	28	7	93 996
29	2	16 002	30	3	21 654	31	4	412 004	32	6	50 004
33	9	200 124	34	5	251 005	35	2	103 256	36	3	102 162
37	8	3 100 136	38	7	3 014 557	39	9	4 121 001	40	5	1 607 110
41	4	3 202 108	42	6	1 153 002	43	8	5 300 368	44	7	2 934 463
45	2	1 245 002	46	3	7 002 240	47	4	1 320 120	48	6	5 271 240

Division

4, 5, 6 and 7-digit dividends 1-digit divisors (remainders)

1	2	5 637	2	3	3 107	3	4	6 115	4	6	7 887
5	6	9 117	6	8	8 113	7	7	8 145	8	9	9 806
9	8	9 237	10	7	83 444	11	9	12 008	12	5	10 233
13	5	7 013	14	2	3 117	15	3	4 351	16	4	7 007
17	7	9 026	18	9	9 104	19	5	2 118	20	2	5 561
21	9	46 014	22	5	91 158	23	2	68 103	24	3	40 132
25	2	16 003	26	3	21 656	27	4	412 001	28	6	50 007
29	4	50 007	30	6	71 007	31	8	90 015	32	7	93 999
33	9	200 127	34	5	251 003	35	2	103 259	36	3	102 163
37	8	3 100 139	38	7	3 014 554	39	9	4 121 000	40	5	1 607 117
41	4	3 202 107	42	6	1 153 001	43	8	5 300 868	44	7	2 934 465
45	2	1 245 005	46	3	7 002 242	47	4	1 320 123	48	6	5 271 243

Multiplication & Division
Review

1	3 678 x 9	2	4 087 x 7
3	4 603 x 8	4	9 531 x 6
5	1 098 x 5	6	5 437 x 2
7	6 789 x 3	8	4 873 x 4
9	603 x 38	10	600 x 59
11	532 x 67	12	378 x 50
13	782 x 543	14	643 x 689
15	504 x 293	16	478 x 356

17	4) 706	18	6) 507
19	8) 301	20	5) 197
21	9) 7 303	22	2) 5 917
23	7) 3 334	24	3) 2 032
25	4) 70 003	26	6) 87 013
27	8) 35 125	28	5) 46 008
29	9) 821 003	30	2) 543 007
31	7) 356 788	32	3) 312 887
33	4) 5 110 045	34	6) 8 013 177
35	8) 3 305 119	36	5) 4 117 003

Solutions

Page 6 Addition: Basic facts to 18

1	**6**	2	**10**	3	**10**	4	**16**	5	**9**
6	**10**	7	**12**	8	**8**	9	**11**	10	**9**
11	**13**	12	**14**	13	**14**	14	**9**	15	**10**
16	**11**	17	**9**	18	**6**	19	**11**	20	**12**
21	**13**	22	**18**	23	**12**	24	**9**	25	**8**
26	**11**	27	**6**	28	**11**	29	**11**	30	**15**
31	**17**	32	**9**	33	**12**	34	**7**	35	**12**
36	**15**	37	**8**	38	**10**	39	**9**	40	**15**
41	**16**	42	**13**	43	**16**	44	**14**	45	**13**
46	**13**	47	**12**	48	**11**	49	**13**	50	**14**

Page 7 Addition: Three and more 1-digit Addends

1	**17**	2	**15**	3	**12**	4	**15**	5	**14**
6	**19**	7	**20**	8	**13**	9	**17**	10	**13**
11	**24**	12	**15**	13	**11**	14	**15**	15	**22**
16	**15**	17	**20**	18	**19**	19	**20**	20	**20**
21	**20**	22	**18**	23	**15**	24	**24**	25	**25**
26	**22**	27	**19**	28	**23**	29	**25**	30	**21**
31	**26**	32	**22**	33	**22**	34	**21**	35	**18**
36	**23**	37	**21**	38	**16**	39	**27**	40	**25**

Page 8 Addition: Two 2-digit Addends (no carrying)

1	**77**	2	**78**	3	**59**	4	**99**	5	**86**
6	**77**	7	**88**	8	**88**	9	**84**	10	**86**
11	**97**	12	**68**	13	**85**	14	**84**	15	**98**
16	**77**	17	**79**	18	**99**	19	**78**	20	**79**
21	**59**	22	**59**	23	**74**	24	**84**	25	**78**
26	**77**	27	**39**	28	**95**	29	**76**	30	**89**
31	**88**	32	**68**	33	**98**	34	**58**	35	**77**
36	**59**	37	**79**	38	**57**	39	**55**	40	**79**
41	**96**	42	**49**	43	**57**	44	**97**	45	**69**

Page 9 Addition: Two 2-digit Addends (carrying required)

1	**85**	2	**75**	3	**62**	4	**76**	5	**90**
6	**82**	7	**80**	8	**64**	9	**68**	10	**81**
11	**74**	12	**81**	13	**92**	14	**80**	15	**72**
16	**60**	17	**93**	18	**46**	19	**50**	20	**90**
21	**83**	22	**96**	23	**53**	24	**91**	25	**72**
26	**119**	27	**109**	28	**109**	29	**109**	30	**119**
31	**119**	32	**109**	33	**118**	34	**108**	35	**109**
36	**123**	37	**123**	38	**161**	39	**161**	40	**112**
41	**121**	42	**153**	43	**115**	44	**130**	45	**118**

Page 10 Addition: Three and more 2-digit Addends (no carrying)

1	**84**	2	**68**	3	**67**	4	**58**	5	**73**
6	**68**	7	**69**	8	**78**	9	**89**	10	**77**
11	**78**	12	**89**	13	**99**	14	**78**	15	**89**
16	**77**	17	**89**	18	**98**	19	**98**	20	**58**
21	**89**	22	**78**	23	**88**	24	**89**	25	**88**
26	**86**	27	**98**	28	**75**	29	**86**	30	**96**

Page 11 Addition: Three and more 2-digit Addends (carrying required)

1 **87**	2 **95**	3 **82**	4 **91**	5 **83**
6 **95**	7 **81**	8 **84**	9 **80**	10 **91**
11 **84**	12 **76**	13 **81**	14 **86**	15 **76**
16 **121**	17 **124**	18 **132**	19 **126**	20 **144**
21 **75**	22 **89**	23 **86**	24 **92**	25 **81**
26 **135**	27 **188**	28 **301**	29 **298**	30 **211**

Page 12 Addition: Two 3-digit Addends (no carrying)

1 **$3.55**	2 **783 ml**	3 **779 kg**	4 **$8.95**	5 **779 ml**
6 **668 km**	7 **779 kg**	8 **$8.95**	9 **998 ml**	10 **794 km**
11 **$9.70**	12 **838 days**	13 **789 kg**	14 **894 g**	15 **889 km**
16 **977 ml**	17 **$7.75**	18 **899 km**	19 **885 kg**	20 **$8.75**
21 **598 m**	22 **767 km**	23 **$7.95**	24 **987 ml**	25 **679 km**
26 **$8.65**	27 **899 kg**	28 **799 km**	29 **$9.85**	30 **789 days**
31 **878 ml**	32 **788 km**	33 **$8.80**	34 **849 m**	35 **898 kg**
36 **777 km**	37 **789 kg**	38 **798 ml**	39 **$5.70**	40 **788 km**
41 **$7.95**	42 **788 m**	43 **757 km**	44 **787 ml**	45 **797 kg**

Page 13 Addition: Two 3-digit Addends (carrying required)

1 **$8.10**	2 **695 ml**	3 **896 kg**	4 **$8.80**	5 **596 ml**
6 **814 km**	7 **844 kg**	8 **$7.30**	9 **713 ml**	10 **845 km**
11 **$7.50**	12 **953 days**	13 **592 kg**	14 **837 g**	15 **832 km**
16 **910 ml**	17 **$8.40**	18 **833 km**	19 **784 kg**	20 **$9.40**
21 **715 m**	22 **660 km**	23 **$7.30**	24 **1 011 ml**	25 **943 km**
26 **$12.70**	27 **1 416 kg**	28 **1 031 km**	29 **$17**	30 **1 467 days**
31 **1 410 ml**	32 **1 006 km**	33 **$10**	34 **1 001 m**	35 **1 443 kg**
36 **1 400 km**	37 **1 200 kg**	38 **1 207 ml**	39 **$10**	40 **1 000 km**
41 **$15.50**	42 **1 308 m**	43 **1 267 km**	44 **1 206 ml**	45 **1 998 kg**

Page 14 Subtraction: Basic facts: 1 & 2-digit minuend, 1-digit subtrahend

1	**6**	2	**2**	3	**0**	4	**3**	5	**2**
6	**2**	7	**1**	8	**1**	9	**7**	10	**3**
11	**1**	12	**4**	13	**3**	14	**0**	15	**2**
16	**2**	17	**8**	18	**1**	19	**5**	20	**4**
21	**1**	22	**3**	23	**3**	24	**1**	25	**6**
26	**1**	27	**4**	28	**4**	29	**2**	30	**7**
31	**5**	32	**5**	33	**3**	34	**1**	35	**6**
36	**4**	37	**2**	38	**5**	39	**9**	40	**8**
41	**8**	42	**7**	43	**7**	44	**7**	45	**4**
46	**7**	47	**7**	48	**7**	49	**9**	50	**8**

Page 15 Subtraction: 2-digit minuend, 1 and 2-digit subtrahend (no borrowing)

1	**12**	2	**45**	3	**32**	4	**46**	5	**43**
6	**51**	7	**11**	8	**42**	9	**32**	10	**43**
11	**47**	12	**83**	13	**44**	14	**38**	15	**32**
16	**42**	17	**63**	18	**92**	19	**23**	20	**11**
21	**33**	22	**70**	23	**40**	24	**21**	25	**22**
26	**25**	27	**35**	28	**51**	29	**61**	30	**41**
31	**43**	32	**61**	33	**16**	34	**43**	35	**61**
36	**22**	37	**52**	38	**45**	39	**13**	40	**11**
41	**17**	42	**13**	43	**21**	44	**11**	45	**10**
46	**24**	47	**64**	48	**52**	49	**34**	50	**32**

Page 16 Subtraction: 2-digit minuend, 1 & 2-digit subtrahend (borrowing required)

1	**44**	2	**29**	3	**46**	4	**15**	5	**15**
6	**38**	7	**28**	8	**35**	9	**35**	10	**47**
11	**57**	12	**64**	13	**17**	14	**48**	15	**64**
16	**37**	17	**56**	18	**84**	19	**34**	20	**45**
21	**36**	22	**69**	23	**35**	24	**14**	25	**25**
26	**39**	27	**28**	28	**43**	29	**56**	30	**29**
31	**36**	32	**58**	33	**9**	34	**39**	35	**51**
36	**5**	37	**47**	38	**37**	39	**18**	40	**28**
41	**24**	42	**29**	43	**27**	44	**5**	45	**19**
46	**28**	47	**55**	48	**49**	49	**25**	50	**27**

Page 17 Subtraction: 3-digit minuend, 2 and 3-digit subtrahend (no borrowing)

1	**221**	2	**713**	3	**620**	4	**203**	5	**722**
6	**402**	7	**533**	8	**331**	9	**925**	10	**306**
11	**812**	12	**42**	13	**506**	14	**200**	15	**411**
16	**218**	17	**433**	18	**721**	19	**822**	20	**330**
21	**131**	22	**510**	23	**142**	24	**932**	25	**312**
26	**830**	27	**300**	28	**411**	29	**800**	30	**330**
31	**20**	32	**420**	33	**243**	34	**404**	35	**20**
36	**621**	37	**410**	38	**501**	39	**220**	40	**300**
41	**213**	42	**402**	43	**340**	44	**609**	45	**510**

Page 18 Subtraction: 3-digit minuend, 2 & 3-digit subtrahend (borrowing required)

1	**214**	2	**408**	3	**415**	4	**427**	5	**609**
6	**224**	7	**415**	8	**318**	9	**318**	10	**509**
11	**638**	12	**339**	13	**179**	14	**223**	15	**507**
16	**203**	17	**317**	18	**606**	19	**409**	20	**429**
21	**504**	22	**619**	23	**245**	24	**645**	25	**238**
26	**581**	27	**80**	28	**562**	29	**581**	30	**490**
31	**277**	32	**162**	33	**242**	34	**711**	35	**403**
36	**888**	37	**364**	38	**388**	39	**179**	40	**399**
41	**301**	42	**577**	43	**279**	44	**416**	45	**217**

Page 19 Subtraction: 4, 5, 6 and 7-digit minuends 4, 5, 6 and 7-digit subtrahends (no borrowing)

1	**2 326**	2	**2 283**	3	**531**	4	**3 211**
5	**2 022**	6	**3 873**	7	**3 022**	8	**103**
9	**23 431**	10	**11 001**	11	**21 133**	12	**46 141**
13	**23 312**	14	**21 207**	15	**20 012**	16	**41 102**
17	**221 030**	18	**351 252**	19	**313 002**	20	**121 500**
21	**607 356**	22	**290 021**	23	**121 001**	24	**313 205**
25	**4 121 123**	26	**1 100 523**	27	**3 011 821**	28	**6 530 835**
29	**6 137 012**	30	**2 414 201**	31	**3 343 930**	32	**1 154 120**
33	**5 054 053**	34	**8 721 222**	35	**1 055**	36	**3 728 211**

Page 20 Subtraction: 4, 5, 6 & 7-digit minuends 4, 5, 6 & 7-digit subtrahends (borrowing required)

1	**2 536**	2	**6 019**	3	**2 007**	4	**7 977**
5	**3 018**	6	**3 217**	7	**2 208**	8	**3 195**
9	**51 376**	10	**31 075**	11	**31 368**	12	**31 077**
13	**32 167**	14	**51 179**	15	**12 079**	16	**34 089**
17	**330 767**	18	**412 469**	19	**323 687**	20	**720 266**
21	**208 677**	22	**785 678**	23	**228 867**	24	**216 686**
25	**3 966 823**	26	**2 173 726**	27	**2 066 161**	28	**5 252 006**
29	**4 667 453**	30	**1 756 854**	31	**2 832 259**	32	**2 688 763**
33	**6 478 431**	34	**8 995 889**	35	**3 787 889**	36	**958 262**

Page 21 Addition and Subtraction: *Review*

1	**724**	2	**1 283**	3	**1 404**	4	**1 180**	5	**1 473**
6	**199**	7	**230**	8	**215**	9	**292**	10	**215**
11	**269**	12	**315**	13	**268**	14	**335**	15	**290**
16	**46**	17	**42**	18	**37**	19	**24**	20	**14**
21	**254**	22	**556**	23	**351**	24	**104**	25	**133**
26	**4 969**	27	**3 737**	28	**6 818**	29	**5 808**	30	**796**
31	**27 699**	32	**49 267**	33	**10 559**	34	**22 114**	35	**2 091**
36	**246 865**	37	**777 918**	38	**194 463**	39	**76 348**	40	**321 008**
41	**2 879 411**	42	**3 116 122**	43	**2 002 608**	44	**2 112 884**	45	**6 995 994**
46	**3 000 001**	47	**2 001 001**	48	**999 011**	49	**1 628 900**	50	**1 243 972**

Page 22 Multiplication: Basic facts: Times Tables to 10 x 10

1	**0**	2	**80**	3	**10**	4	**35**	5	**0**	6	**16**	7	**0**	8	**45**
9	**36**	10	**40**	11	**35**	12	**15**	13	**72**	14	**90**	15	**30**	16	**8**
17	**42**	18	**12**	19	**16**	20	**18**	21	**42**	22	**36**	23	**28**	24	**18**
25	**64**	26	**81**	27	**24**	28	**12**	29	**49**	30	**21**	31	**24**	32	**27**
33	**48**	34	**32**	35	**21**	36	**24**	37	**56**	38	**72**	39	**14**	40	**18**
41	**16**	42	**56**	43	**9**	44	**32**	45	**36**	46	**8**	47	**54**	48	**28**
49	**14**	50	**27**	51	**48**	52	**63**	53	**12**	54	**12**	55	**20**	56	**63**
57	**6**	58	**100**	59	**40**	60	**45**	61	**6**	62	**60**	63	**0**	64	**24**
65	**0**	66	**50**	67	**30**	68	**0**	69	**54**	70	**18**	71	**0**	72	**0**

Page 23 Multiplication: 1-digit multiplier 2, 3 and 4-digit multiplicands (no carrying)

1	**69**	2	**48**	3	**64**	4	**84**	5	**99**	6	**88**
7	**624**	8	**369**	9	**848**	10	**246**	11	**639**	12	**448**
13	**452**	14	**309**	15	**804**	16	**602**	17	**936**	18	**480**
19	**6 420**	20	**3 609**	21	**8 804**	22	**2 406**	23	**9 603**	24	**4 888**
25	**4 620**	26	**6 093**	27	**4 848**	28	**8 642**	29	**9 996**	30	**4 008**
31	**4 628**	32	**6 669**	33	**4 800**	34	**6 284**	35	**6 093**	36	**4 448**
37	**8 006**	38	**9 036**	39	**4 408**	40	**8 080**	41	**9 990**	42	**8 888**
43	**6 200**	44	**6 090**	45	**8 884**	46	**8 400**	47	**9 336**	48	**8 004**
49	**2 886**	50	**3 339**	51	**8 484**	52	**6 882**	53	**6 909**	54	**8 040**

Page 24 Multiplication: 1-digit multiplier 2, 3 and 4-digit multiplicands (carrying required)

1	**140**	2	**215**	3	**52**	4	**138**	5	**360**	6	**240**
7	**1 624**	8	**2 650**	9	**1 122**	10	**2 545**	11	**376**	12	**1 138**
13	**2 247**	14	**2 436**	15	**872**	16	**3 618**	17	**6 314**	18	**4 590**
19	**10 030**	20	**12 182**	21	**12 654**	22	**8 198**	23	**12 861**	24	**14 030**
25	**22 059**	26	**49 644**	27	**30 400**	28	**55 278**	29	**54 081**	30	**28 980**
31	**45 072**	32	**6 184**	33	**13 912**	34	**11 700**	35	**40 103**	36	**20 516**
37	**7 740**	38	**10 485**	39	**19 564**	40	**73 971**	41	**39 690**	42	**22 456**
43	**31 600**	44	**5 061**	45	**61 794**	46	**17 512**	47	**36 546**	48	**48 390**
49	**29 400**	50	**31 934**	51	**2 018**	52	**40 824**	53	**8 472**	54	**28 374**

Page 25 Multiplication: 2-digit multiplier 2, 3 and 4-digit multiplicands (no carrying)

1	**736**	2	**682**	3	**504**	4	**960**	5	**504**	6	**726**
7	**1 476**	8	**2 660**	9	**4 160**	10	**2 982**	11	**9 060**	12	**2 948**
13	**4 092**	14	**2 904**	15	**4 816**	16	**4 192**	17	**4 080**	18	**7 383**
19	**76 560**	20	**86 860**	21	**51 600**	22	**65 503**	23	**50 904**	24	**49 161**
25	**24 516**	26	**40 868**	27	**106 240**	28	**43 186**	29	**88 263**	30	**29 900**
31	**26 060**	32	**42 933**	33	**50 442**	34	**39 060**	35	**102 951**	36	**27 996**

Page 26 Multiplication: 2-digit multiplier 2, 3 and 4-digit multiplicands (carrying required)

1	**1 802**	2	**1 288**	3	**1 825**	4	**4 482**	5	**1 755**	6	**4 720**
7	**20 570**	8	**37 800**	9	**29 260**	10	**38 700**	11	**18 900**	12	**54 720**
13	**59 670**	14	**59 972**	15	**26 599**	16	**34 522**	17	**46 354**	18	**70 078**
19	**189 105**	20	**148 350**	21	**139 810**	22	**294 570**	23	**218 358**	24	**214 385**
25	**406 042**	26	**216 172**	27	**196 620**	28	**372 198**	29	**771 356**	30	**551 817**
31	**91 340**	32	**88 374**	33	**190 596**	34	**295 800**	35	**168 547**	36	**103 908**

Page 27 Multiplication: 3-digit multiplier 3-digit multiplicand (no carrying)

1	**64 326**	2	**17 324**	3	**88 880**	4	**72 072**	5	**93 916**	6	**37 146**
7	**89 688**	8	**66 356**	9	**53 460**	10	**72 716**	11	**91 908**	12	**69 930**
13	**45 024**	14	**49 608**	15	**41 106**	16	**41 602**	17	**53 460**	18	**82 800**
19	**99 900**	20	**82 200**	21	**25 048**	22	**47 508**	23	**39 483**	24	**61 306**
25	**98 568**	26	**41 003**	27	**41 600**	28	**81 406**	29	**96 800**	30	**87 344**

Page 28 Multiplication: 3-digit multiplier 3-digit multiplicand (carrying required)

1	**236 205**	2	**117 468**	3	**65 360**	4	**107 500**	5	**183 940**	6	**73 505**
7	**271 138**	8	**403 788**	9	**399 090**	10	**411 600**	11	**368 217**	12	**153 571**
13	**346 567**	14	**319 074**	15	**288 638**	16	**593 918**	17	**190 548**	18	**639 158**
19	**393 646**	20	**480 000**	21	**458 955**	22	**618 076**	23	**317 988**	24	**759 807**
25	**221 778**	26	**306 600**	27	**478 800**	28	**217 617**	29	**101 125**	30	**974 169**

Page 29 Division: Basic facts: Times Tables to 100 ÷ 10

1	**10**	2	**0**	3	**5**	4	**7**
5	**2**	6	**9**	7	**10**	8	**7**
9	**4**	10	**2**	11	**10**	12	**6**
13	**4**	14	**5**	15	**2**	16	**0**
17	**0**	18	**3**	19	**9**	20	**2**
21	**4**	22	**8**	23	**9**	24	**3**
25	**5**	26	**10**	27	**9**	28	**3**
29	**9**	30	**7**	31	**3**	32	**7**
33	**8**	34	**6**	35	**2**	36	**2**
37	**8**	38	**3**	39	**3**	40	**9**
41	**4**	42	**4**	43	**9**	44	**9**
45	**8**	46	**4**	47	**8**	48	**8**
49	**2**	50	**6**	51	**9**	52	**2**
53	**4**	54	**7**	55	**7**	56	**4**
57	**2**	58	**5**	59	**3**	60	**5**
61	**8**	62	**8**	63	**6**	64	**5**
65	**7**	66	**9**	67	**0**	68	**5**
69	**0**	70	**3**	71	**3**	72	**10**
73	**6**	74	**5**	75	**0**	76	**6**
77	**0**	78	**10**	79	**7**	80	**5**
81	**5**	82	**0**	83	**6**	84	**10**

Page 30 Division: 1 and 2-digit dividend 1-digit divisor (remainders)

1	**1 r4**	2	**1 r1**	3	**1 r2**	4	**1 r3**	5	**1 r2**	6	**1 r1**
7	**1 r2**	8	**1 r2**	9	**1 r2**	10	**4 r1**	11	**2 r1**	12	**2 r3**
13	**1 r5**	14	**1 r6**	15	**1 r6**	16	**3 r1**	17	**1 r3**	18	**2 r1**
19	**3 r1**	20	**4 r1**	21	**4 r3**	22	**2 r4**	23	**3 r3**	24	**4 r1**
25	**5 r8**	26	**2 r3**	27	**6 r1**	28	**5 r2**	29	**6 r2**	30	**4 r3**
31	**5 r3**	32	**5 r5**	33	**7 r7**	34	**4 r3**	35	**9 r1**	36	**7 r2**
37	**9 r2**	38	**8 r3**	39	**8 r6**	40	**7 r1**	41	**9 r3**	42	**8 r4**
43	**10 r1**	44	**11 r1**	45	**10 r3**	46	**10 r3**	47	**8 r3**	48	**0 r3**
49	**10 r8**	50	**16 r4**	51	**11 r1**	52	**10 r2**	53	**12 r3**	54	**13 r2**
55	**10 r4**	56	**10 r5**	57	**10 r3**	58	**14 r2**	59	**15 r1**	60	**13 r1**
61	**20 r2**	62	**15 r1**	63	**11 r1**	64	**11 r6**	65	**10 r5**	66	**10 r1**
67	**20 r1**	68	**23 r2**	69	**23 r1**	70	**16 r3**	71	**11 r4**	72	**14 r1**

Page 31 Division: 3-digit dividend 1-digit divisor (no remainders)

1	**101**	2	**121**	3	**213**	4	**152**	5	**101**	6	**113**
7	**129**	8	**101**	9	**60**	10	**156**	11	**310**	12	**175**
13	**150**	14	**102**	15	**122**	16	**100**	17	**145**	18	**103**
19	**253**	20	**104**	21	**166**	22	**119**	23	**101**	24	**109**
25	**47**	26	**197**	27	**304**	28	**141**	29	**225**	30	**146**
31	**124**	32	**116**	33	**19**	34	**75**	35	**216**	36	**150**
37	**133**	38	**129**	39	**117**	40	**132**	41	**34**	42	**92**
43	**99**	44	**95**	45	**124**	46	**85**	47	**72**	48	**86**
49	**26**	50	**43**	51	**88**	52	**66**	53	**93**	54	**67**
55	**49**	56	**46**	57	**45**	58	**37**	59	**52**	60	**99**
61	**77**	62	**22**	63	**63**	64	**34**	65	**68**	66	**54**
67	**88**	68	**238**	69	**47**	70	**84**	71	**13**	72	**15**

Page 32 Division: 3-digit dividend 1-digit divisor (remainders)

1	**121 r2**	2	**170 r1**	3	**143 r1**	4	**150 r3**	5	**116 r5**	6	**100 r3**
7	**115 r6**	8	**100 r3**	9	**61 r2**	10	**150 r1**	11	**222 r1**	12	**140 r3**
13	**151 r5**	14	**103 r1**	15	**124 r3**	16	**101 r1**	17	**140 r3**	18	**105 r3**
19	**266 r1**	20	**103 r1**	21	**150 r3**	22	**129 r3**	23	**103 r7**	24	**112 r5**
25	**50 r8**	26	**194 r3**	27	**311 r1**	28	**134 r1**	29	**248 r3**	30	**145 r1**
31	**112 r5**	32	**126 r6**	33	**18 r8**	34	**62 r2**	35	**386 r1**	36	**141 r1**
37	**145 r1**	38	**117 r3**	39	**113 r7**	40	**128 r4**	41	**37 r7**	42	**91 r2**
43	**88 r1**	44	**88 r1**	45	**102 r1**	46	**88 r1**	47	**69 r3**	48	**91 r3**
49	**26 r4**	50	**57 r3**	51	**89 r1**	52	**33 r1**	53	**86 r2**	54	**68 r3**
55	**48 r1**	56	**42 r6**	57	**45 r6**	58	**39 r4**	59	**55 r1**	60	**93 r2**
61	**79 r3**	62	**30 r5**	63	**74 r7**	64	**34 r6**	65	**73 r2**	66	**50 r3**
67	**77 r1**	68	**248 r2**	69	**41 r1**	70	**90 r4**	71	**20 r7**	72	**26 r6**

Page 33 Division: 4, 5, 6 and 7-digit dividends 1-digit divisors (no remainders)

1 **1 402**	2 **1 557**	3 **1 451**	4 **1 752**
5 **1 289**	6 **1 012**	7 **423**	8 **2781**
9 **1 519**	10 **1 014**	11 **1 164**	12 **1 089**
13 **2 819**	14 **1 036**	15 **1 528**	16 **1 314**
17 **5 113**	18 **18 231**	19 **34 050**	20 **13 377**
21 **1 154**	22 **11 921**	23 **1 334**	24 **2 047**
25 **12 502**	26 **11 834**	27 **11 252**	28 **13 428**
29 **8 001**	30 **7 218**	31 **103 001**	32 **8 334**
33 **22 236**	34 **50 201**	35 **51 628**	36 **34 054**
37 **387 517**	38 **430 651**	39 **457 889**	40 **321 422**
41 **800 527**	42 **192 167**	43 **662 546**	44 **419 209**
45 **622 501**	46 **2 334 080**	47 **330 030**	48 **878 540**

Page 34 Division: 4, 5, 6 and 7-digit dividends 1-digit divisors (remainders)

1 **2 818 r1**	2 **1 035 r2**	3 **1 528 r3**	4 **1 314 r3**
5 **1 519 r3**	6 **1 014 r1**	7 **1 163 r4**	8 **1 089 r5**
9 **1 154 r5**	10 **11 920 r4**	11 **1 334 r2**	12 **2 046 r3**
13 **1 402 r3**	14 **1 558 r1**	15 **1 450 r1**	16 **1 751 r3**
17 **1 289 r3**	18 **1 011 r5**	19 **423 r3**	20 **2780 r1**
21 **5 112 r6**	22 **18 231 r3**	23 **34 051 r1**	24 **13 377 r1**
25 **8 001 r1**	26 **7 218 r2**	27 **103 000 r1**	28 **8 334 r3**
29 **12 501 r3**	30 **11 834 r3**	31 **11 251 r7**	32 **13 428 r3**
33 **22 236 r3**	34 **50 200 r3**	35 **51 629 r1**	36 **34 054 r1**
37 **387 517 r3**	38 **430 650 r4**	39 **457 888 r8**	40 **321 423 r2**
41 **800 526 r3**	42 **192 166 r5**	43 **662 608 r4**	44 **419 209 r2**
45 **622 502 r1**	46 **2 334 080 r2**	47 **330 030 r3**	48 **878 540 r3**

Page 35 Multiplication and Division: *Review*

1 **33 102**	2 **28 609**	3 **36 824**	4 **57 186**
5 **5 490**	6 **10 874**	7 **20 367**	8 **19 492**
9 **22 914**	10 **35 400**	11 **35 644**	12 **18 900**
13 **424 626**	14 **443 027**	15 **147 672**	16 **170 168**
17 **176 r2**	18 **84 r3**	19 **37 r5**	20 **39 r2**
21 **811 r4**	22 **2 958 r1**	23 **476 r2**	24 **677 r1**
25 **17 500 r3**	26 **14 502 r1**	27 **4 390 r5**	28 **9 201 r3**
29 **91 222 r5**	30 **271 503 r1**	31 **50 969 r5**	32 **104 295 r2**
33 **1 277 511 r1**	34 **1 335 529 r3**	35 **413 139 r7**	36 **823 400 r3**