

Grade 5 Mathematics Workbook

Answers

1

Numbers

Flashback zone

Quick-fire 1

- | | | |
|----------------------|--------------------|------------------------|
| 1. 3 200 | 2. Thousands | 3. 14 fruits |
| 4. 200 | 5. 2 400 | 6. 8.100 |
| 7. 80 chairs | 8. 3 200 | 9. 120 primary schools |
| 10. 2 exercise books | 11. $\frac{1}{15}$ | 12. $\frac{1}{12}$ |
| 13. $q = 100$ | 14. 15 | 15. 10 |
| 16. An eighth | | |

Quick-fire 2

- | | | |
|--------------------|--|-------------------|
| 1. 160 | 2. 700 | 3. 1 000 |
| 4. 800 | 5. 88 goats | 6. 2 700 |
| 7. 4 | 8. 24 and 36 | |
| 10. $\frac{1}{16}$ | | |
| 11. (a) 288 | (b) $\frac{1}{3}$ | (c) $\frac{4}{5}$ |
| (d) 0.6 | (e) 1.9 (Mark any other correct answers) | |
| 12. 4 oranges | 13. $(x + 4)$ tomatoes | 14. 4 children |
| 15. $t = 6$ | 16. Thousandths | |

1.1 Whole numbers

Place value of digits in a number

- A** 1. (a) 1-Tens of thousands, 2-Thousands, 3-Hundreds, 4-Tens, 7-Ones
(b) 2-Tens of thousands, 9-Thousands, 5-Hundreds, 6-Tens, 4-Ones
(c) 7-Hundreds of thousands, 2-Tens of thousands, 1-Thousands, 2-Hundreds, 4-Tens, 8-Ones
(d) 1-Hundreds of thousands, 2-Tens of thousands, 8-Thousands, 1-Hundreds, 0-Tens, 6-Ones
2. (a) Ones (b) Hundreds (c) Thousands
(d) Tens of thousands (e) Thousands (f) Ones
- B** 1. 8-Thousands, 7-Hundreds, 6-Tens, 5-Ones
2. 1-Tens of thousands, 9-Thousands, 2-Hundreds, 3-Tens, 5-Ones
3. (a) 11 250
(b) 1-Tens of thousands, 1-Thousands, 2-Hundreds, 5-Tens, 0-Ones

Total value of digits in a number

- A** 1. 7-70 000, 9-9 000, 3-300, 8-80, 1-1
8-80 000, 2-2 000, 1-100, 6-60, 1-1
7-700 000, 8-80 000, 2-2 000, 1-100, 5-50, 6-6
9-900 000, 3-30 000, 6-6 000, 8-800, 1-10, 7-7
2. (a) 500 (b) 5 000 (c) 50 000 (d) 500 000

- B** 1. (a) 2-200, 8-80 000 (b) 79 800
 2. 100 000
 3. 5-500 000, 4-40 000, 6-6 000, 8-800, 0-0, 2-2

Numbers in symbols

- A** 1. (a) 3 983 (b) 60 745 (c) 98 299 (d) 28 007 (e) 5 208 (f) 88 600
B 1. 3 715
 2. 38 201

Reading and writing numbers in words

- A** 2. (a) Five thousand, four hundred and thirty-three
 (b) Two thousand, one hundred and fifteen
 (c) Nine thousand and three
 (d) Forty-four thousand, two hundred and twenty-three
 (e) Forty thousand, six hundred and eighty-nine
 (f) Sixty thousand and five
 (g) Ninety-eight thousand, five hundred and one
B 1. Seven thousand, two hundred and eighty-two
 2. Twenty-eight thousand, seven hundred and nine
 3. (a) Twenty-nine thousand, seven hundred and fifteen.
 (b) Twenty-three thousand, seven hundred and eight

Writing numbers in increasing order

- A** 1. 6 178, 6 187, 7 618, 8 167, 8 176 2. 7 912, 9 127, 9 217, 9 271, 9 712
 3. 4 369, 4 396, 6 439, 9 436, 9 643 4. 22 359, 23 395, 24 539, 24 593, 29 532
 5. 47 589, 47 859, 47 895, 47 958, 47 985 6. 83 456, 83 546, 83 564, 83 645, 83 654
B 1. 1 010, 1 012, 1 112, 1 212 2. 20 001, 29 018, 33 130, 34 007, 34 403, 35 618
 3. 2 513, 2 531, 3 215, 3 512, 3 521 4. 95 348, 95 384, 95 438, 95 438, 95 534, 95 834, 95 843

Writing numbers in decreasing order

- A** 1. 3 871, 3 718, 3 712, 3 172, 3 127 2. 7 431, 7 341, 7 314, 7 143, 7 134
 3. 4 765, 4 675, 4 657, 4 576, 4 567 4. 23 853, 23 835, 23 521, 23 251, 23 135
 5. 93 721, 93 271, 93 172, 93 127, 92 217 6. 56 876, 56 867, 56 786, 56 768, 56 687
B 1. 3 941, 3 614, 1 598, 1 397, 1 287 2. 12 870, 12 807, 12 780, 12 708, 12 087
 3. 1 545, 1 543, 1 534, 1 455, 1 453, 1 435, 1 354, 1 345 4. 67 703, 67 321, 67 123, 66 731, 63 976

Rounding off numbers

- A** 1. (a) 7 100 (b) 2 800 (c) 9 200 (d) 7 300
 (e) 5 300 (f) 3 700
 (g) 4 800 (h) 9 900
 2. (a) 38 000 (b) 22 000 (c) 72 000 (d) 20 000
 (e) 46 000 (f) 32 000 (g) 92 000 (h) 51 000
B 1. 17 400 2. 67 200 3. Sh 74 000 4. 56 000

Divisibility test of 2

×	20	21	22	23	24	25	26	27	28	29	30
4	80	84	88	92	96	100	104	108	112	116	120
Divisible by 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	100	105	110	115	120	125	130	135	140	145	150
Divisible by 2	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

- (a) Yes
(b) Multiples of 4 are all even numbers. Even numbers are divisible by 2.
- (a) No
(b) Multiples of 5 are both even and odd numbers. Even numbers are divisible by 2 and odd numbers are not.

- B** 1. (a) Not divisible (b) Divisible (c) Not divisible
(d) Not divisible (e) Divisible (f) Not divisible
(g) Divisible (h) Not divisible
- (a) 0, 2, 4, 6 or 8 (b) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
(c) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 (d) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
(e) 0, 2, 4, 6 or 8 (f) 0, 2, 4, 6 or 8

Divisibility test of 5

×	40	41	42	43	44	45	46	47	48	49	50
5	200	205	210	215	220	225	230	235	240	245	250
Divisible by 5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	240	246	252	258	264	270	276	282	288	294	300
Divisible by 5	Yes	No	No	No	No	Yes	No	No	No	No	Yes

- (a) Yes
(b) All multiples of 5 are divisible by 5.
- (a) No
(b) Some multiples of 6 end with 0 or 5 while others do not. Those that end with 0 or 5 are divisible by 5 and those that do not end with 0 and 5 are not.

- A** 1. (a) Not divisible (b) Divisible (c) Divisible
(d) Not divisible (e) Not divisible (f) Divisible
(g) Divisible (h) Not divisible
- (a) 0 or 5 (b) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
(c) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 (d) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
(e) 0 or 5 (f) 0 or 5

Divisibility test of 10

X	30	31	32	33	34	35	36	37	38	39	40
8	240	248	256	264	272	280	288	296	304	312	320
Divisible by 10	Yes	No	No	No	No	Yes	No	No	No	No	Yes
9	270	279	288	297	306	315	324	333	342	351	360
Divisible by 10	Yes	No	No	No	No	No	No	No	No	No	Yes
10	300	310	320	330	340	350	360	370	380	390	400
Divisible by 10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- (a) No

(b) Some multiples of 8 end with 0 while others do not. Those that end with 0 are divisible by 10 and those that do not end with 0 are not.

2. (a) No

(b) Some multiples of 9 end with 0 while others do not. Those that end with 0 are divisible by 10 and those that do not end with 0 are not.

3. (a) Yes

(b) All multiples of 10 are divisible by 10.

- B** 1. (a) Divisible (b) Not divisible
(c) Not divisible (d) Divisible
(e) Not divisible (f) Not divisible
(g) Not divisible (h) Not divisible
2. (a) 0 (b) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
(c) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 (d) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
(e) 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 (f) 0

Highest common factor

- A** 1. (a) 3 (b) 4 (c) 12 (d) 4 (e) 4 (f) 9
2. (a) 2 (b) 9 (c) 3 (d) 3 (e) 7 (f) 2
- B** 1. 18 2. 25 3. 12 4. 2 5. 3

Least common multiple

- A** 1. (a) 56 (b) 12 (c) 24 (d) 80 (e) 15 (f) 8
2. (a) 1 260 (b) 24 (c) 120 (d) 72 (e) 108 (f) 144
- B** 1. 48 2. 300 kg 3. 360 4. 270

1.2: Addition

Addition of numbers without regrouping

- A** 1. (a) 575 423 (b) 897 689 (c) 759 894
(d) 634 989 (e) 47 999
2. (a) 985 878 (b) 876 679 (c) 697 778
(d) 899 478 (e) 888 999 (f) 432 777
- B** 1. 385 540 2. 784 385 3. 259 998 4. 125 442

Addition of numbers with regrouping

- A** 1. (a) 987 692 (b) 569 496 (c) 506 937 (d) 596 840
(e) 965 097 (f) 913 894 (g) 305 908 (h) 831 645
2. (a) 685 806 (b) 958 910 (c) 199 079 (d) 899 910
(e) 210 999 (f) 927 060 (g) 500 895 (h) 821 099
- B** 1. 157 100 2. 108 613 3. 424 232 4. 454 009

Estimating sum by rounding off numbers

- A** 1. (a) 1 560 (b) 90 (c) 10 810 (d) 12 390
2. (a) 100 (b) 9 800 (c) 18 900 (d) 691 200
3. (a) 2 000 (b) 16 000 (c) 1 143 000 (d) 1 112 000
- B** 1. 527 000 2. 125 000 3. 219 000 4. 109 500

Addition patterns

- A** 1. 195, 395, 597, 801, 1 007, 1 215 2. 12 540, 12 960, 13 380, 13 800, 14 220
3. 3 450, 4 550, 5 650, 6 750, 7 850, 8 950 4. 56 320, 66 420, 76 520, 86 620, 96 720, 106 820
- B** 1. The pattern may vary from one learner to the other. The smallest six-digit number is 100 000.
2. 6, 12, 18, 24, 30, 36, 42
3. 2 473, 4 023, 5 573, 7 123, 8 673, 10 223
4. (a) 13 755, 14 897, 16 039, 17 181, 18 323, 19 465 (b) 19 465

1.3: Subtraction

Subtraction of numbers without regrouping

- A** 1. 721 314 2. 322 311 3. 311 126 4. 210 271
B 1. 54 261 2. 117 222 3. 115 500 4. 443 132

Subtraction of numbers with regrouping

- A** 1. 218 543 2. 40 940 3. 506 294 4. 117 842 5. 84 931
B 1. 10 721 2. 333 283 3. 11 498 4. 1 301

Estimating difference by rounding off numbers to the nearest hundred

- A** 1. 2 400 2. 64 300 3. 288 700 4. 629 700
B 1. 264 900 2. 52 500 3. 226 100 4. 55 300

Estimating difference by rounding off numbers to the nearest thousand

- A** 1. 177 000 2. 279 000 3. 70 000 4. 432 000
B 1. 6 000 2. 11 000 3. 414 000

Combined addition and subtraction

- A** 1. 833 621 2. 301 191 3. 429 216 4. 10 826
B 1. 272 944 2. 72 752 3. 280 000

Subtraction patterns

- A** 1. 100, 80, 60, 40, 20 2. 86 432, 85 432, 84 432, 83 432, 82 432
3. 75 637, 75 537, 75 437, 75 337, 75 237 4. 64 260, 64 250, 64 240, 64 230, 64 220
- B** 1. 12 480, 12 460, 12 440, 12 420, 12 400, 12 380
2. 32 833, 32 712, 32 591, 32 470, 32 349
3. Sh 419 890, sh 417 780, sh 415 670, sh 413 560, sh 411 450

1.4: Multiplication

Multiplication of numbers

- A** 1. 2 808 2. 8 692 3. 6 017 4. 7 546 5. 4 092 6. 4 816
B 1. 2 772 2. 8 400 3. 5 088

Multiplication of numbers with regrouping (1)

- A** 1. 2 860 2. 2 625 3. 1 884 4. 3 320 5. 1 505 6. 2 092
B 1. 2 452 2. 660 3. 242

Multiplication of numbers with regrouping (2)

- A** 1. 32 625 2. 7 875 3. 11 986 4. 13 200 5. 23 400 6. 11 550
- B** 1. 4 354 2. 6 144 3. 1 750 4. 1 536

Estimating products by rounding off factors

- A** 1. 3 300 2. 16 400 3. 7 000 4. 5 000 5. 6 200 6. 12 000
- B** 1. 1 200 2. 3 000 3. 2 300

Multiplication patterns

1. (a) 27 (b) 80 (c) 64 (d) 96
2. (a) 4, 12, 36 (b) 1, 4, 16, 64 (c) 12, 24, 48, 96

1.5 Division

Dividing numbers

- A** 1. 21 2. 31 3. 56 4. 31 5. 25 6. 32
- B** 1. 24 2. 48 3. Sh 140

Comparing division and multiplication

- A** 1. $168 \div 12 = 14$ 2. $23 \times 11 = 253$
 $168 \div 14 = 12$ $11 \times 23 = 253$
 $12 \times 14 = 168$ $253 \div 11 = 23$
 $14 \times 12 = 168$ $253 \div 23 = 11$
- B** 1. (a) $368 \div 16 = 23$ (b) $630 \div 21 = 30$
 $368 \div 23 = 16$ $630 \div 30 = 21$
 $16 \times 23 = 368$ $21 \times 30 = 630$
 $23 \times 16 = 368$ $30 \times 21 = 630$
2. $432 \div 36 = 12$ 3. $648 \div 18 = 36$
 $432 \div 12 = 36$ $648 \div 36 = 18$
 $36 \times 12 = 432$ $18 \times 36 = 648$
 $12 \times 36 = 432$ $36 \times 18 = 648$

Estimating quotient by rounding off numbers

- A** 1. 6 2. 7 3. 9
- B** 1. 33 2. 59

Combined operations (1)

- A** 1. 21 2. 36 3. 100 4. 560 5. 40 6. 410
- B** 1. 20 2. 320 3. Sh 100

Combined operations (2)

- A** 1. 144 2. 30 3. 28 4. 62 5. 48 6. 13
- B** 1. Sh 810 2. Sh 1 080

Combined operations (3)

- A** 1. 100 2. 530 3. 128 4. 39
- B** 1. 35 2. 46 3. 50 4. 90

1.6 Fractions

Equivalent fractions

- A** 1. $\frac{1}{4}$ and $\frac{2}{8}$ 2. $\frac{3}{5}$ and $\frac{9}{15}$
3. $\frac{2}{7}$ and $\frac{6}{21}$ 4. $\frac{2}{6}$ and $\frac{8}{24}$
5. $\frac{3}{8}$ and $\frac{12}{32}$ 6. $\frac{3}{9}$ and $\frac{9}{27}$
- B** 1. $\frac{4}{18}$ and $\frac{6}{27}$ 2. $\frac{6}{8}$ and $\frac{9}{12}$
3. $\frac{8}{18}$ and $\frac{12}{27}$ 4. $\frac{2}{20}$ and $\frac{3}{30}$
5. $\frac{6}{22}$ and $\frac{9}{33}$ 6. $\frac{2}{14}$ and $\frac{3}{21}$

Simplifying fractions

- A** 1. $\frac{1}{2}$ 2. $\frac{1}{6}$ 3. $\frac{1}{3}$
4. $\frac{1}{5}$ 5. $\frac{1}{3}$ 6. $\frac{1}{3}$
- B** 1. The missing number is 2 2. The missing number is 9
3. The missing number is 6 4. The missing number is 3

Comparing fractions

- A** 1. Less than 2. Less than 3. Greater than
4. Equal to 5. Less than 6. Greater than
- B** 1. $\frac{7}{8}$ 2. $\frac{5}{9}$ 3. $\frac{6}{10}$ 4. $\frac{11}{12}$

Ordering fractions

- A** 1. $\frac{1}{2}$, $\frac{2}{5}$, $\frac{3}{8}$ 2. $\frac{4}{5}$, $\frac{3}{5}$, $\frac{7}{15}$ 3. $\frac{2}{3}$, $\frac{3}{6}$, $\frac{3}{12}$, $\frac{1}{6}$
- B** 1. $\frac{1}{2}$, $\frac{3}{5}$, $\frac{2}{3}$, $\frac{3}{4}$ 2. $\frac{1}{3}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{5}{6}$ 3. $\frac{2}{4}$, $\frac{3}{5}$, $\frac{3}{4}$, $\frac{7}{8}$

Addition of fractions with the same denominator

- A** 1. $\frac{4}{5}$ 2. $\frac{5}{7}$ 3. $\frac{8}{9}$ 4. $\frac{4}{8}$ or $\frac{1}{2}$
- B** 1. $\frac{4}{5}$ 2. $\frac{6}{8}$ or $\frac{3}{4}$ 3. $\frac{7}{8}$

Subtraction of fractions with the same denominator

- A** 1. $\frac{3}{12}$ or $\frac{1}{4}$ 2. $\frac{6}{17}$
3. $\frac{4}{15}$ 4. $\frac{4}{24}$ or $\frac{1}{6}$
- B** 1. $\frac{1}{4}$ 2. $\frac{2}{12}$ or $\frac{1}{6}$
3. (a) Odhiambo (b) $\frac{2}{5}$

Addition of fractions with different denominators

- A** 1. $\frac{7}{16}$ 2. $\frac{17}{18}$ 3. $\frac{28}{30}$ or $\frac{14}{15}$ 4. $\frac{5}{14}$
- B** 1. $\frac{14}{15}$ or $\frac{7}{10}$ 2. $\frac{10}{24}$ or $\frac{5}{12}$ 3. $\frac{39}{40}$

Subtraction of fractions with different denominators

- A** 1. $\frac{7}{24}$ 2. 1 3. $\frac{13}{18}$ 4. $\frac{11}{24}$
- B** 1. $\frac{3}{8}$ 2. $\frac{1}{21}$ 3. $\frac{1}{8}$

1.7 Decimals

Place value of decimals up to thousandths

- A** 1. (a) 3-Ones, 2-Tenths, 7-Hundredths, 8-Thousandths
(b) 2-Tens, 1-Ones, 3-Tenths, 7-Hundredths, 6-Thousandths
(c) 9-Hundreds, 3-Tens, 1-Ones, 2-Tenths, 7-Hundredths, 0-Thousandths
(d) 4-Hundreds, 0-Tens, 1-Ones, 0-Tenths, 2-Hundredths, 8-Thousandths
2. (a) Ones (b) Tenths (c) Hundredths
(d) Thousandths (e) Tenths (f) Hundreds and Thousandths
3. (a) 3 (b) 1 (c) 6
(d) 8 (e) 9 (f) 7
- B** 1. 38.782 2. 209.805 3. 431.072 4. 856.402

Writing decimals from the smallest to the largest

- A** 1. 19.387, 19.738, 19.783, 19.837, 19.873 2. 20.123, 20.132, 20.231, 20.312, 20.321
3. 5.400, 5.42, 5.423, 5.43, 5.432 4. 13.65, 13.657, 13.67, 13.671, 13.675
- B** 1. (a) 36.4 °C, 36.5 °C, 36.6 °C, 36.7 °C, 36.9 °C, 39.7 °C (b) Mary (c) Jane
2. (a) 98.10 kg, 98.12 kg, 98.2 kg, 98.21 kg, 98.3 kg (b) Friday

Writing decimals from the largest to the smallest

- A** 1. 4.765, 4.675, 4.657, 4.576, 4.567 2. 8.641, 8.614, 8.416, 8.164, 8.146
3. 12.987, 12.978, 12.897, 12.798, 12.789 4. 79.721, 79.712, 79.271, 79.172, 79.127
- B** 1. 71.21 kg, 70.85 kg, 68.27 kg, 66.35 kg, 57.18 kg 2. 1.71 m, 1.7 m, 1.67 m, 1.6 m, 1.17 m

Addition of decimals

- A** 1. 613.821 2. 729.28 3. 19.59 4. 27.379 5. 728.281 6. 347.999
7. 98.345 8. 507.02 9. 121.767 10. 828.78 11. 1283.01 12. 810.489
- B** 1. 40.52 m 2. 5.37 kg 3. 21.58 litres 4. 1 698.26 kg 5. 238.67 km

Subtraction of decimals

- A** 1. 24.12 2. 40.53 3. 2.421 4. 11.33 5. 120.553 6. 189.376
- B** 1. 46.42 m 2. 103.16 km 3. 600.12 kg

1.8 Simple equations

Forming equations (1)

- A** 1. $y + 7 = 15$ 2. $k - 8 = 32$ 3. $f + 15 = 73$ 4. $p - 29 = 6$
- B** 1. $13 + w = 29$ 2. $22 + h = 45$ or $45 - h = 22$

Forming equations (2)

- A** 1. $3p = 27$ 2. $2t = 88$ 3. $7x = 91$
4. $6y = 24$ 5. $3w = 27$ 6. $12m = 36$
- B** 1. $8t = 16$ 2. $10n = 4$

Forming equations (3)

- A** 1. $n \div 3 = 13$ 2. $12 \div k = 4$ 3. $40 \div m = 9$
4. $28 \div 7 = z$ 5. $35 \div x = 7$
- B** 1. $f \div 3 = 12$ 2. $51 \div w = 17$ 3. $m \div 4 = 55$

Solving equations (1)

- A** 1. $p = 38$ 2. $c = 13$ 3. $g = 87$ 4. $k = 123$ 5. $j = 14$ 6. $w = 7$
- B** 1. $q = 14$ 2. $f = 60$ 3. $v = 77$
4. 33 years 5. $t = 53$ books 6. 45 learners

Solving equations (2)

- A** 1. $x = 9$ 2. $b = 7$ 3. $w = 16$
4. $t = 5$ 5. $z = 3$ 6. $p = 8$
- B** 1. $m = 8$ 2. $d = 19$ 3. $g = 9$
4. 8 pieces 5. 44 times

Solving equations (3)

- A** 1. $x = 325$ 2. $e = 1\,452$ 3. $w = 93$ 4. $a = 486$
5. $k = 72$ 6. $c = 147$ 7. $y = 80$ 8. $m = 55$
9. $p = 63$ 10. $n = 40$
- B** 1. $t = 76$ 2. $z = 36$ 3. $d = 392$
4. $p = 54$ years 5. 54 kg

Stretch zone 1

1. 69 000 2. 32 3. 41 4. 1 284 000
5. 222 000 6. 530 915 7. 120 8. 10 680
9. 18 10. 472 11. $\frac{4}{5}$ 12. $\frac{3}{10}, \frac{2}{5}, \frac{1}{2}, \frac{3}{5}, \frac{7}{10}$
13. 3 14. 17.498 15. $78 - t = 45$

Flashback zone**Quick-fire 1**

1. 100 centimetres = 1 metre
2. 3 000 m
3. $2\,500\text{ m}^2$
4. $A = l \times w$
5. 16 cm^3
6. 1 000 millimetres = 1 litre
7. 5 bottles
8. Mass is the quantity of matter in an object.
9. 1 000 grams = 1 kilogram
10. Mzito, by 4 kg
11. 60 minutes = 1 hour
12. 180 minutes

Quick-fire 2

1. 12 metres
2. None ($100\text{ m} = 10\,000\text{ cm}$)
3. $1\,000\text{ cm}^2$
4. 10 cm
5. $A = S \times S$
6. 24 cm^3
7. 3 bottles
8. 35 litres
9. 100 bottles
10. None ($4\frac{1}{4}\text{ litre} = 1\text{ litre}$)
11. 35 000 grams
12. None ($50\text{ kg} = \text{two-}25\text{ kgs}$)
13. 1 500 grams
14. 650-shilling notes
15. Kinoti

2.1 Length**Converting kilometres to metres**

- A** 1. 15 000 m 2. 29 000 m 3. 3 000 m 4. 11 580 m 5. 32 019 m 6. 2 752 m
- B** 1. 3 400 m 2. 2 667 m 3. 7 000 m 4. 10 702 m

Converting metres to kilometres

- A** 1. (a) 5 km (b) 18 km (c) 21 km (d) 32 km
2. (a) 5 km 189 m (b) 31 km 750 m (c) 13 km 9 m (d) 46 km 607 m
- B** 1. 1 km 850 m
2. 2 km 286 m
3. 50 km

Addition of length

- A** 1. 9 km 544 m 2. 23 km 434 m 3. 61 km 464 m
4. 34 km 263 m 5. 104 km 904 m 6. 201 km 148 m
- B** 1. (a) 14 km 170 m (b) 9 km 890 m
2. 4 km 101 m

Subtraction of length

- A** 1. 59 km 190 m 2. 56 km 872 m 3. 43 km 139 m 4. 2 km 910 m

- B** 1. (a) Elijah (b) 1 km 300 m
 2. 2 km 700 m
 3. 6 km 220 m

Multiplication of length

- A** 1. 28 km 728 m 2. 7 km 380 m 3. 30 km 730 m
 4. 66 km 200 m 5. 47 km 40 m 6. 162 km 891 m
- B** 1. 4 km 400 m 2. 37 km 500 m

Division of length

- A** 1. 1 km 427 m 2. 343 m 3. 1 km 437 m
 4. 5 km 6 m 5. 1 km 620 m 6. 3 km 13 m
- B** 1. 62 km 500 m 2. 1 km 504 m

2.2 Area

Area of a rectangle

- A** 1. 24 cm² 2. 108 cm² 3. 360 cm² 4. 1 247 cm²
B 1. 96 cm² 2. 6 435 cm² 3. 2 664 cm² 4. 247 cm²

Area of a square

- A** 1. 100 cm² 2. 169 cm² 3. 625 cm² 4. 1 369 cm²
B 1. 225 cm² 2. 7 744 cm² 3. 2 704 cm² 4. 6 084 cm²

2.3 Volume

Volume of stacks

- A** 1. 36 cubes 2. 27 cubes 3. 64 cubes 4. 30 cubes
B 1. 125 cubes 2. 120 cubes 3. 216 cubes

Volume of a cuboid

- A** 1. (a) 40 cm³ (b) 308 cm³ (c) 50 cm³ (d) 35 cm³
 2. (a) 280 cm³ (b) 4 320 cm³
- B** 1. 8100 cm³ 2. 30 cm³ 3. 600 cm³

Volume of a cube

- A** 1. (a) 216 cm³ (b) 64 cm³ (c) 125 cm³ (d) 343 cm³
 2. (a) 343 cm³ (b) 2 744 cm³
- B** 1. 729 cm³ 2. 512 cm³

2.4 Capacity

Converting litres to millilitres

- A** 1. 45 000 ml 2. 69 000 ml 3. 90 000 ml
 4. 34 023 ml 5. 49 675 ml 6. 9 500 ml
- B** 1. 50 000 ml 2. 98 000 ml 3. 8 450 ml
 4. 12 575 ml

Converting millilitres to litres

- A** 1. (a) 5 l (b) 45 l (c) 85 l
2. (a) 45 l 500 ml (b) 12 l 50 ml (c) 55 l 555 ml
- B** 1. 10 l 2. 50 l
3. 90 l 50 ml 4. 5 l 50 ml

Addition of capacity

- A** 1. 59 l 689 ml 2. 499 l 999 ml 3. 109 l 290 ml
4. 86 l 149 ml 5. 310 l 125 ml
- B** 1. 85 l 250 ml 2. 18 l
3. 27 l 900 ml 4. 178 l 920 ml

Subtraction of capacity

- A** 1. 32 l 301 ml 2. 22 l 176 ml 3. 32 l 213 ml
4. 321 l 533 ml 5. 92 l 571 ml
- B** 1. 520 l 250 ml 2. 1 931 l 250 ml
3. 9 631 l 267 ml 4. 7 446 l 118 ml

Multiplication of capacity

- A** 1. 141 l 400 ml 2. 1 500 l 420 ml 3. 433 l 400 ml
4. 2 253 l 750 ml 5. 3 362 l 500 ml
- B** 1. 106 l 750 ml 2. 68 l 750 ml
3. 648 l 4. 389 l 375 ml

Division of capacity

- A** 1. 5 l 158 ml 2. 62 l 125 ml 3. 6 l 71 ml
4. 4 l 109 ml 5. 6 l 843 ml
- B** 1. 9 l 450 ml 2. 143 l 937 ml 3. 1 l 413 ml
4. 52 l 812 ml

2.5 Mass

- A** 1. (a) 5 (b) 8 (c) 25 (d) 40 (e) 55 (f) 81
2. (a) 1 (b) 3 (c) 5 (d) 7 (e) 8 (f) 9
- B** 1. 10 2. 40 3. 20 4. Khelayi-16, Mungati-8

Converting kilograms to grams

- A** 1. 2 000 g 2. 8 000 g 3. 15 000 g
4. 5 030 g 5. 7 045 g 6. 3 010 g
- B** 1. 50 000 g 2. 70 000 g
3. 150 235 g 4. 70 125 g

Converting grams to kilograms

- A** 1. (a) 1 kg (b) 3 kg (c) 7 kg
(d) 11 kg (e) 22 kg (f) 67 kg
2. (a) 2 kg 500 g (b) 4 kg 350 g (c) 3 kg 195 g
(d) 25 kg 180 g (e) 63 kg 150 g (f) 83 kg 1 g
- B** 1. 30 tins 2. 10 kg 3. 6 kg 250 g

Addition of mass

- A** 1. 81 kg 2. 538 kg 205 g 3. 227 kg 100 g
4. 211 kg 10 g 5. 356 kg 100 g 6. 930 kg 420 g
- B** 1. 415 kg 850 g 2. 601 kg 40 g 3. 1 031 kg 375 g

Subtraction of mass

- | | | |
|-------------------------|----------------|-----------------|
| A 1. 7 kg 749 g | 2. 99 kg 500 g | 3. 51 kg 717 g |
| 4. 348 kg 570 g | 5. 94 kg 890 g | 6. 386 kg 700 g |
| B 1. 29 kg 550 g | 2. 89 kg 400 g | 3. 138 kg 207 g |

Multiplication of mass

- | | | |
|--------------------------|-----------------|-----------------|
| A 1. 363 kg 600 g | 2. 379 kg 500 g | 3. 108 kg 600 g |
| 4. 502 kg 300 g | 5. 315 kg 408 g | 6. 565 kg 80 g |
| B 1. 30 kg 375 g | 2. 630 kg 875 g | 3. 28 kg 750 g |

Division of mass

- | | | |
|-------------------------|----------------|----------------|
| A 1. 12 kg 60 g | 2. 30 kg 50 g | 3. 18 kg 24 g |
| 4. 18 kg 13 g | 5. 80 kg 340 g | 6. 23 kg 117 g |
| B 1. 70 kg 540 g | 2. 72 kg 545 g | 3. 69 kg 771 g |

2.6 Time

Comparing and converting minutes to seconds

- | | | | |
|-------------------------|------------------|----------------|----------------|
| A 1. 240 seconds | 2. 1 500 seconds | 3. 365 seconds | 4. 910 seconds |
| 5. 570 seconds | 6. 1 363 seconds | | |
| B 1. 960 seconds | 2. 240 seconds | 3. 80 seconds | 4. 380 seconds |

Converting seconds to minutes

- | | |
|----------------------------|--------------------------|
| A 1. (a) 2 minutes | (b) 6 minutes |
| (c) 9 minutes | (d) 13 minutes |
| 2. (a) 1 minute 30 seconds | (b) 2 minutes 30 seconds |
| (c) 5 minutes 40 seconds | (d) 12 mins 30 seconds |
| B 1. 300 seconds | 2. 240 seconds |
| 3. 740 seconds | 4. 950 seconds |

Addition of time

- | | | |
|-----------------------------------|--------------------------|--------------------------|
| A 1. 18 minutes 43 seconds | 2. 55 minutes | |
| 3. 50 minutes 2 seconds | 4. 70 minutes 54 seconds | |
| 5. 6 minutes 5 seconds | 6. 16 minutes 1 second | |
| B 1. 30 minutes 54 seconds | 2. 31 minutes 25 seconds | 3. 38 minutes 20 seconds |

Subtraction of time

- | | | |
|-----------------------------------|--------------------------|--------------------------|
| A 1. 15 minutes 32 seconds | 2. 23 minutes 32 seconds | 3. 25 minutes 18 seconds |
| 4. 21 minutes 16 seconds | 5. 38 minutes 29 seconds | 6. 16 minutes 44 seconds |
| B 1. 1 minute 48 seconds | 2. 3 minutes 51 seconds | 3. 34 minutes 36 seconds |

Multiplication of time

- | | | |
|-----------------------------------|---------------------------|---------------------------|
| A 1. 20 minutes 36 seconds | 2. 73 minutes 48 seconds | 3. 76 minutes 30 seconds |
| 4. 367 minutes 30 seconds | 5. 272 minutes | 6. 415 minutes 36 seconds |
| B 1. 28 minutes | 2. 124 minutes 16 seconds | 3. 175 minutes 30 seconds |

Division of time

- A**
- | | | |
|------------------------|-------------------------|-------------------------|
| 1. 8 minutes 9 seconds | 2. 6 minutes 50 seconds | 3. 5 minutes 27 seconds |
| 4. 8 minutes 9 seconds | 5. 9 minutes 34 seconds | 6. 5 minutes 29 seconds |
- B**
- | | | |
|-------------------------|-------------------------|-------------------------|
| 1. 9 minutes 40 seconds | 2. 5 minutes 34 seconds | 3. 9 minutes 15 seconds |
| 4. 8 minutes 18 seconds | | |

2.7 Money

A budget

- (a) (Responses will vary but emphasis should be budgeting for needs rather than wants.)
- (b) A budget is a list of things one intends to buy and the amount of money to spend on each item.
- (c) Importance of making a budget:
- Not to overspend on non-essential things.
 - To be able to save wisely.
 - To live within our means.

Paying tax

- (a) Poster to include government offering of the following services:
- Medical services
 - Electricity
 - Roads
 - Education
 - Water services
- (b) Tax is the money the government collects from people in order to offer services.

Apply zone

- | | | | | |
|----------|-----------|-----------|-----------|-------------|
| 1. sh 14 | 2. sh 500 | 3. sh 600 | 4. sh 750 | 5. sh 1 600 |
|----------|-----------|-----------|-----------|-------------|

Services people get from banks

Answers may vary. Some of the answers may include:

- giving loans to people
- depositing money
- safe custody of valuable items money
- withdrawing money.

Saving wisely

Answers may vary. Some of the answers may include:

- Making a budget on the things to buy
- Paying for important expenses first
- Referring to the budget when spending money
- Spending within the budget.

Stretch zone 2

- | | | |
|---------------------------|---|--|
| 1. 61 kg 374 g | 2. 7 kg 380 g | |
| 3. 79 102 m | 4. 11 km 840 m | |
| 5. 961 cm ² | 6. 2 072 cm ² | |
| 7. 27 unit cubes | 8. 5-litre container; more by 2 500 ml (2½ litres). | |
| 9. 47 l 250 ml | 10. 1 080 cm ³ | |
| 11. 93 minutes 48 seconds | 12. 32 minutes 40 seconds | |
13. Importance of tax to government is so as to offer services such as:
- | | | |
|--------------------|-------------|---------------|
| - Medical services | - Education | - Electricity |
| - Water services | - Roads | |
14. Services offered by banks:
- | | |
|------------------|-----------------------------|
| - Loans | - Safe custody of valuables |
| - Money deposits | - Withdrawing money |

Flashback zone**Quick-fire 1**

1. A line that meets (intersects) another line at a right angle (90°).
2. A figure formed by two rays that have a common endpoint.
3. A protractor
4. 12 edges
5. (Answer to vary from one learner to another.)
6. 8 corners/points/vertices
7. 5 faces
8. A cylinder
9. (Answer to vary from one learner to another.)
10. A sphere

Quick-fire 2

1. (Answer to vary from one learner to another.)
2. (Answer to vary from one learner to another.)
3. (Answer to vary from one learner to another.)
4. A pencil and a pair of compasses.
5. Perpendicular
6. Outer scale and inner scale.
7. Sphere
8. 90°
9. North and South or East and West.

3.1 Lines**Parallel, perpendicular, horizontal and vertical lines**

- A** 1. Parallel 2. Perpendicular 3. Horizontal 4. Vertical
- B** 1. Perpendicular lines are lines that meet at right angles, that is, 90° .
2. Parallel lines:
- AC to BD
 - AB to CD
3. Lines marked D.

3.2 Angles**Measuring angles using a unit angle**

- A** 1. 4 unit angles 2. 8 unit angles 3. 2 unit angles
4. 11 unit angles 5. 5 unit angles 6. 12 unit angles
- B** The answers will depend on the angles at the corners. Generally, the corners are 90° . Therefore, the angles will be:
1. 9 unit angles 2. 9 unit angles 3. 9 unit angles

Measuring angles in degrees

- A** 1. 47° 2. 68° 3. 80° 4. 136° 5. 159° 6. 15°
- B** (Answers will depend on the size of angle drawn.)

3.3 3-D objects**3-D objects in the environment**

- B** (Answers will depend on items in the environment.)
- B** 1. a sphere 2. a cuboid 3. a cuboid 4. a cylinder

2-D shapes in 3- D objects

- A**
1. Rectangles
 2. Rectangles
 3. Circle
 4. Circles
 5. Square and triangles
- B**
1. a cube
 2. a pyramid
 3. a cuboid
 4. a sphere
 5. a cylinder

Stretch zone 3

1. Lines A.
2. Pairs of perpendicular lines:
3. Angle k is a right angle.
4. Angle MNP is 120° .
5. Cylinder
6. Pyramid

4

Data handling

Flashback zone

Quick-fire 1

1. Facts and figures from which conclusions can be drawn
2. Frequency tables.
3. 

Quick-fire 2

1. Collect data, organize data, display or represent data in a table
2. Table
3. 6
4. 95

4.1 Data representation

A

1.

Age	Number
9	12
10	12
11	6

2.

Drink	Number
Tea	6
Milk	6
Coffee	6
Water	7

3.

Children in the home	Number of families
1	5
2	5
3	4
4	4
5	2

4.

Subject	Number
Mathematics	30
English	29
Kiswahili	23
Science	24
Social Studies	27

B

1.

Vegetable	Number
Kales	15
Spinach	20
Cabbage	9
Cucumber	7

2.

Colour	Number
Green	9
Red	11
Blue	10
Yellow	3
Black	5

3.

Day of the week	Number
Monday	12
Tuesday	15
Wednesday	9
Thursday	5
Friday	14

Recording data in tables using tally marks and frequency tables

A 1. (a)

Number	Tally marks
4	
9	###
13	### ###
29	### ### ### ### ###

(b)

Number	Tally marks
11	### ###
17	### ### ###
25	### ### ### ### ###
30	### ### ### ### ### ###

2. (a)

Tally marks	Number
	3
###	7
### ###	14
### ### ### ###	21

(b)

Tally marks	Number
###	9
### ### ###	15
### ### ###	16
### ### ### ### ### ###	30

3.

Learner	Tally marks	Number
Opiyo	### ###	10
Imali	### ###	12
Noor	### ### ###	17
Laptop	### ### ### ###	24

B 1.

Electronic item	Tally marks	Number
Desktop	### ### ###	18
Smartphone	### ### ### ###	21
Tablet	### ### ###	15
Laptop	### ### ### ### ###	27

2.

Chicken feed	Tally marks	Number
Chick mash	### ### ### ###	23
Layer mash	### ### ###	15
Broiler mash	### ### ### ### ###	25
Grower mash	### ### ###	18

3.

Day of the week	Tally marks	Number
Monday	###	8
Tuesday	### ###	14
Wednesday	### ### ### ### ###	28
Thursday	### ### ### ###	24
Friday	### ### ### ### ###	26

4.

Day	Tally marks	Number
1	### ### ### ### ###	28
2	### ### ### ### ### ###	30
3	### ### ###	19
4	### ### ### ###	24
5	### ###	11

Interpretation of data

- A** 1. (a) 22 (b) 23 (c) 68
2. (a) Monday (b) Wednesday and Friday
- (c) Thursday (d) 14 litres

B 1.

Material	Tally marks	Number of learners
Banana fibre	###	8
Sisal fibre	### ###	13
Grass	### ### ###	15
Reeds	### ###	10
Raffia		4

- (a) 15 (b) Raffia (c) Grass (d) 11 (e) 50

2. (a) 18 (b) ### ### ### ### ### ### (c) ### ### ### ### ### I
(d) 13 (e) ### ### ### II (f) Monday and Thursday

3.

Day of the week	Tally marks	Number
Monday	### ### II	12
Tuesday	### III	8
Wednesday	### ### ###	15
Thursday	###	5
Friday	### ###	10

- (a) 50 vehicles (b) Wednesday (c) 5 vehicles (d) Thursday
(e) 10 (f) 2 (g) Monday and Wednesday

Stretch zone 4

1. (a) Banana (b) Orange and melon (c) 7
(d) 5; tallied as ### (e) ### III

2.

Grade	Tally marks	Number of learners
1	### ### ### ### ### II	27
2	### ### ### ### ### ###	30
3	### ### ### ### ###	25
4	### ### ### ### ### ### IIII	34
5	### ### ### ### ### IIII	29
6	### ### ### ### ### I	26
7	### ### ### ### ### ### ### ### II	42
8	### ### ### ### ### ### ### ### ###	45

Summative Assessment Papers

Assessment paper 1

- 739 241
- 3 000
- 18 564, 41 865, 48 615, 61 548, 84 615
- 120 cm, 115 cm and 110 cm.
- 12
- 2 600
- 50 000
- 768 249
- $\frac{2}{5}$
- 18
- 202
- $\frac{1}{4}$
- 56 km 418 m
- Hundredths
- 4 km 900 m
- 168 cm
- 115 minutes
- 1 380 seconds
- sh 75
- 216 cm²
- 420 cm³
- 50 packets
- SV and TU
- 23
- $k = 78$

Assessment paper 2

1. 110 101
2. 0
3. 93 256, 92 356, 69 253, 59 623, 25 936
4. 135 300
5. 4 500, 4 000, 3 500, 3 000, 2 500
6. 24
7. 9 085
8. 40
9. $\frac{12}{27}$
10. 0.85 m, 0.99 m, 1.01 m, 1.1 m, 1.101 m
11. 145 cm
12. 408 cm
13. 720 seconds
14. 55 000 cents
15. Importance of paying taxes is so that the government offer services such as:
 - Medical services - Education - Electricity
 - Water services - Roads
16. $1\,296\text{ cm}^2$
17. 84 cm^3
18. 84 l 202 ml
19. $1\,200\text{ cm}^3$
20. 10 kg 700 g
21. Line TC.
22. Angle t is 50° .
23. $f = 6$
24. Cucumber
25. 4 learners

Assessment paper 3

1. One thirty seven thousand, four hundred and sixty seven.
2. 8 000
3. 1 and 5
4. 907 569
5. 41 000
6. 35
7. 80
8. 84
9. $\frac{1}{5}, \frac{3}{10}, \frac{4}{10}, \frac{3}{5}, \frac{7}{10}$
10. 49.118
11. 11 km 535 m
12. 90 m
13. 08.30
14. sh 160 and 01 cents
15. Services offered by banks:
 - (a) Loans
 - (b) Safe custody of valuables
 - (c) Money deposits
 - (d) Withdrawing money
16. $31\,500\text{ m}^2$
17. 64 cubes
18. Teaspoon holds an estimate of 5 ml; a tablespoon an estimate of 10 ml.
19. 12 litres
20. 92 kg 272 g
21. Angle XYW
22. (Model of cuboid using locally available materials such as cardboard material, straws and wires.)
23. 15, which is XV in Hindu Arabic.

24.

Day	Tally marks	Number of loaves
Monday	### ### I	11
Tuesday	### IIII	9
Wednesday	### ### III	13
Thursday	###	5
Friday	### I	6
Saturday	### III	8
Sunday	### ###	10

25. 7 loaves.

