Answers

1. Numbers

1.1 Whole numbers

Place value of digits in a number

Apply

1.

	Number	HM	TM	M	HTH	TTH	Th	H	T	O
(a)	356 894				3	5	6	8	9	4
(b)	4 256 789			4	2	5	6	7	8	9
(c)	634 897			6	3	2	4	8	9	7
(d)	13 251 487		1	3	2	5	1	4	8	7
(e)	72 345 697		7	2	3	4	5	6	9	7
(f)	182 573 849	1	8	2	5	7	3	8	4	9

2. **(a)** Tens of thousands **(b)** Hundreds of thousands
(c) Millions **(d)** Millions
(e) Tens of millions **(f)** Hundreds of millions

3.

Number	M	HTH	TTH	TH	H	T	O
4 025 679	4	0	2	5	6	7	9

4. Millions

5.

Number	TM	M	HTH	TTH	TH	H	T	O
16 321 489	1	6	3	2	1	4	8	9

6. Tens of millions

7.

Number	HM	TM	M	HTH	TTH	TH	H	T	O
398 256 221	3	9	8	2	5	6	2	2	1

8. Hundreds of millions

Stretch zone

1. Answers will vary.
2. 707 0035 002

Total value of digits in a number

Apply

1. **(a)** 100 000, 60 000, 2 000, 400, 80, 3
(b) 5 000 000, 300 000, 80 000, 9 000, 200, 70, 1
(c) 2 000 000, 900 000, 30 000, 8 000, 400, 10, 3
(d) 10 000 000, 6 000 000, 300 000, 20 000, 1 000, 700, 80, 9
(e) 20 000 000, 5 000,000, 800 000, 70 000, 6 000, 300, 10, 9
(f) 200 000 000, 40 000 000, 9 000 000, 400 000, 50 000, 6 000, 700, 50, 3

2. **(a)** 400 000 **(b)** 4 000 000 **(c)** 4 000 000
(d) 40 000 000 **(e)** 40 000 000 **(f)** 400 000 000

3. 3 000 000, 400 000, 50 000, 2 000, 100, 20, 4

4. 9 000 000

5. 10 000 000, 2 000 000, 200 000, 30 000, 6 000, 200, 70, 8

6. 10 000 000

7. 100 000 000, 20 000 000, 1 000 000, 300 000, 70 000, 5 000, 0, 30, 2

8. **(a)** **(i)** 200 000 000 **(ii)** 5 000 000
(b) 400

Stretch zone

1. Answers will vary. **2.** 802 500 074

Reading and writing numbers in symbols

Learners to read and write the numbers in symbols.

Reading and writing numbers in words

Apply

1. **(a)** Two hundred and thirty six thousand, one hundred and ninety nine.
(b) Five million, one hundred and two thousand six hundred and seventy
(c) Three million and two
(d) Three million, eighty seven thousand two hundred and thirty one
(e) One million two hundred and eight thousand and forty six
(f) Five hundred and seventy three thousand, eight hundred and forty nine

2. **(a)** 349 **(b)** 32 204 **(c)** 414 100 **(d)** 1 590 039

3. Six million, three hundred and one thousand, eight hundred and fifty four

4. Four million, five hundred and twenty thousand two hundred and three

5. Three million, two hundred and fourteen thousand, five hundred and sixty nine

6. One million five hundred and fifty seven thousand, five hundred

7. 927 201 **8.** 2 500 047

Stretch zone

Numbers will vary.

Rounding off numbers

Apply

1. **(a)** 4 000 000 **(b)** 8 000 000 **(c)** 1 000 000
(d) 37 000 000 **(e)** 25 000 000 **(f)** 1 000 000
2. **(a)** 20,000,000 **(b)** 20 000 000 **(c)** 20 000 000
(d) 19 000 000 **(e)** 210 000 000 **(f)** 10 000 000
3. **(a)** 100 000 000 **(b)** 300 000 000 **(c)** 100 000 000
4. 45 000 000 **5.** 90 000 000 **6.** 10 000 000
7. 200 000 000 **8.** 600 000 000

Stretch zone

1. 3 500 000 **2.** 19 999 999 **3.** 99 999 999

Even and odd numbers

1. 792, 794, 796, 798, 800, 802, 804, 806, 808 (any five)
2. 99, 101, 103, 105, 107, 109, 111, 113 (any five)
3. 996, 998, 1 000, 1 002, 1 004
4. 597, 599, 601,603,605
5. 3 002, 3 000, 2 998, 2 996, 2 994, 2 992
6. 1 003, 1 001, 1 999, 1 997, 1 995, 1 993

Stretch zone

1. Even number **2.** Even number

Prime numbers

Apply

1. 301, 307, 311, 313
2. 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199
3. 227, 229, 233, 239, 241, 247, 251, 257, 263, 269
4. 97, 89, 83
5. 53, 59, 61, 67, 71

Stretch zone

1. 2
2. $2 \times 3 \times 3 \times 3$

Operations of whole numbers

Apply

1. **(a)** 19 808 424 **(b)** 4 995 414 **(c)** 226 946 **(d)** 422

2. sh 15 241 920 **3.** 1 375 702 learners

4. 972 passengers **5.** sh 768 000

6. **(a)** 42 full cartons **(b)** 100 books

Stretch zone

1. 8 727 235 people **2.** 2 205 books

Combined operations of whole numbers

Apply

1. 83 121 **2.** 57 484 **3.** 260 238

4. 107 251 **5.** 60 386 **6.** 14,875

7. 159 769 **8.** 58 671 **9.** 64 463

10. 25 250

Stretch zone

1 216 trees

Identifying number sequences

Apply

1. **(a)** 30, 36 **(b)** 64, 128 **(c)** 512, 2 048 **(d)** 405, 1 215

2. **(a)** 2 048, 8 192 **(b)** 936, 988 **(c)** 2 304 , 9 216 **(d)** 494, 596

Stretch zone

7 168, 1 792

Creating number sequences

Apply

1. **(a)** 12, 41, 70, 99, 128, 157

(b) 36 98, 3 610, 3 522, 3 434, 3 346, 3 258

(c) 4, 36, 324, 2 916, 26 244

(d) 31 250, 6 250, 1 250, 250, 50

2. sh 1 500, sh 3 000, sh 4 500, sh 6 000, sh 7 500, sh 9 000

3. 226, 202, 178, 154, 130

4. Answers will vary

Stretch zone

1. 6, 18, 54, 162, 486 **2.** 46 875, 9 375, 1 875, 375, 75

1.2 Factors

1. (a)

Name: _____ **Grade:** _____

Divisibility tests of 2, 3 and 4

For each number, put a ✓ if it is divisible by 2, 3 or 4 and put a X if it is not divisible.

Number	Divisibility by 2	Divisibility by 3	Divisibility by 4
2 044	✓	×	✓
560 231	×	×	×
987 123	×	✓	×
158 932	✓	×	✓
100 006	✓	×	×

(b)

Name: _____ **Grade:** _____

Divisibility tests of 5, 6 and 8

For each number, put a ✓ if it is divisible by 5, 6 or 8 and put a X if it is not divisible.

Number	Divisibility by 5	Divisibility by 6	Divisibility by 8
752 050		×	×
239 562	×	✓	×
50 052	×	✓	×
45 685	✓	×	×
706 320	✓	✓	✓

(c)

Name: _____ **Grade:** _____

Divisibility tests of 9, 10 and 11

For each number, put a ✓ if it is divisible by 9, 10 or 11 and put a X if it is not divisible.

Number	Divisibility by 9	Divisibility by 10	Divisibility by 11
23 683	×	×	✓
742 050	✓	✓	×
239 562	✓	×	×
58 190	×	✓	✓
50 052	×	×	×

2.

Number	Divisibility by 2	Divisibility by 3	Divisibility by 4
2356	✓	×	✓

3.

Number	Divisibility by 5	Divisibility by 6	Divisibility by 8
7,680	✓	✓	✓

4. 11 **5.** 3 litres **6.** 6

Stretch zone

1. 2 **2.** Brown cow **3.** Either 4, 5 or 10

Composite numbers

1. **(a)** 5×53 **(b)** $2 \times 3 \times 3 \times 5 \times 5$ **(c)** $2 \times 2 \times 11 \times 11$
(d) $2 \times 11 \times 23$ **(e)** $2 \times 2 \times 2 \times 2 \times 5 \times 7$ **(f)** $2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 7$
(g) $2 \times 2 \times 3 \times 5 \times 13$ **(h)** $2 \times 2 \times 5 \times 59$

2. $2 \times 5 \times 41$ **3.** $2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 5$

4. $2 \times 19 \times 67$ **5.** $2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 19$

6. $2 \times 2 \times 3 \times 11 \times 73$

Stretch zone

$3 \times 5 \times 7 \times 11 = 1\ 155$

Highest Common Factor (HCF)

1. **(a)** 7 **(b)** 9 **(c)** 4 **(d)** 2

2. 6 **3.** 120 **4.** 100 **5.** 80

Stretch zone

1. 8 m **2.** 20 tiles

Least Common Multiple (LCM)

Apply

1. **(a)** 90 **(b)** 21 **(c)** 540 **(d)** 525

1. 180 **2.** 360 **3.** 720

4. 3 000 g **5.** 720 **6.** 1 200 s or 20 mins

Stretch zone

1. **(a)** After 14 hours or 840 minutes
(b) 10:00 p.m

2. 62 fruits

3. 42

1.3 Fractions

Comparing fractions

Apply

1. **(a)** $\frac{4}{7}$ is less than $\frac{5}{7}$ **(b)** $\frac{1}{4}$ is less than $\frac{1}{2}$

(c) $\frac{1}{6}$ is less than $\frac{2}{5}$ **(d)** $\frac{3}{4}$ is greater than $\frac{2}{5}$

(e) $\frac{8}{3}$ is greater than $\frac{3}{7}$ **(f)** $2\frac{1}{2}$ is greater than $1\frac{1}{4}$

2. **(a)** $\frac{8}{9}, \frac{7}{9}, \frac{5}{9}, \frac{2}{9}$ **(b)** $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{7}$ **(c)** $\frac{2}{3}, \frac{3}{5}, \frac{4}{7}, 1\frac{1}{5}$

3. **(a)** $1\frac{1}{6}, 1\frac{2}{3}, 2\frac{1}{3}, 2\frac{1}{2}$ **(b)** $2\frac{1}{6}, 2\frac{1}{4}, 2\frac{1}{3}, 2\frac{1}{2}$ **(c)** $1\frac{1}{8}, 1\frac{2}{5}, 1\frac{3}{4}, 1\frac{5}{6}$

Stretch zone

1. Boys **2.** Answers may vary

Addition of fractions

Apply

1. **(a)** $\frac{1}{2}$ **(b)** $\frac{5}{7}$ **(c)** $\frac{7}{9}$ **(d)** $\frac{13}{15}$ **(e)** $\frac{11}{20}$

(f) $1\frac{17}{18}$ **(g)** $5\frac{3}{4}$ **(h)** $3\frac{11}{15}$ **(i)** $7\frac{1}{12}$

2. 2 m **3.** 7 kg **4.** 6 litres

Stretch zone

Answers may vary.

Subtraction of fractions

Apply

1. **(a)** $\frac{1}{7}$ **(b)** $\frac{6}{11}$ **(c)** $\frac{1}{2}$ **(d)** $\frac{17}{24}$ **(e)** $\frac{1}{3}$

(f) $\frac{13}{18}$ **(g)** $1\frac{4}{15}$ **(h)** $\frac{1}{2}$ **(i)** $\frac{11}{12}$

2. $\frac{47}{72}$ ha **3.** $1\frac{5}{9}$ m **4.** $1\frac{5}{8}$ hours

Stretch zone

$1\frac{1}{2}$

Multiplication of fractions

Apply

1. **(a)** $\frac{1}{25}$ **(b)** $\frac{1}{6}$ **(c)** $\frac{2}{5}$ **(d)** 3 **(e)** 10

(f) $4\frac{1}{5}$ **(g)** $53\frac{1}{3}$ **(h)** $\frac{5}{6}$ **(i)** $3\frac{21}{25}$

2. 35 kg **3.** $10\frac{1}{2}$ m **4.** $86\frac{1}{6}$ m

Stretch zone

Answers may vary.

Reciprocals of fractions

Apply

1. $\frac{4}{1}$ or 4 **2.** $\frac{7}{2}$ or 3 **3.** $\frac{7}{5}$ or $1\frac{2}{5}$ **4.** $\frac{7}{6}$ or $1\frac{1}{6}$

5. $\frac{3}{7}$ **6.** $\frac{3}{7}$ **7.** $\frac{3}{17}$ **8.** $\frac{3}{10}$

9. $\frac{1}{9}$

Stretch zone

$1\frac{3}{5}$

Division of fractions

Apply

1. **(a)** 8 **(b)** 25 **(c)** $1\frac{11}{20}$ **(d)** $\frac{13}{24}$ **(e)** $\frac{1}{36}$

(f) $\frac{1}{24}$ **(g)** 100 **(h)** $22\frac{2}{5}$ **(i)** 90

2. $\frac{5}{12}$ kg **3.** 6 km **4.** 5 pieces

Identifying and creating number sequences

Apply

1. $\frac{1}{4}, 2\frac{1}{2}$ **2.** $8, 7\frac{1}{3}$ **3.** $4\frac{1}{2}, 5\frac{3}{4}, 7, 8\frac{1}{4}, 9\frac{1}{2}, 10\frac{3}{4}$ **4.** $10\frac{1}{2}, 9, 7\frac{1}{2}, 6, 4\frac{1}{2}, 3$

Stretch zone

$\frac{1}{2}, \frac{5}{6}, 1\frac{1}{6}, 1\frac{1}{2}, 1\frac{5}{6}$

1.4 Decimals

Apply

1.

Digit	Place value	Total value
0	Ones	$0 \times 1 = 0$
Decimal point	.	
0	Tenths	$0 \times 0.1 = 0$
0	Hundredths	$0 \times 0.01 = 0$
1	Thousandths	$1 \times 0.001 = 0.001$
4	Ten thousandths	$4 \times 0.0001 = 0.0004$
3	Hundred thousandths	$3 \times 0.00001 = 0.00003$

2.

Digit	Place value	Total value
8	Tens	$8 \times 10 = 80$
1	Ones	$1 \times 1 = 1$
Decimal point	.	
3	Tenths	$3 \times 0.1 = 0.3$
1	Hundredths	$1 \times 0.01 = 0.01$
2	Thousandths	$2 \times 0.001 = 0.002$
7	Ten thousandths	$7 \times 0.0001 = 0.0007$
8	Hundred thousandths	$8 \times 0.00001 = 0.00008$

3.

Digit	Place value	Total value
4	**tens**	**$4 \times 10 = 40$**
8	Ones	$8 \times 1 = 8$
Decimal point	.	
8	Tenths	$8 \times 0.1 = 0.8$
7	Hundredths	$7 \times 0.01 = 0.07$
6	Thousandths	$6 \times 0.001 = 0.006$
3	Ten thousandths	$3 \times 0.0001 = 0.0003$
5	Hundred thousandths	$5 \times 0.00001 = 0.00005$

4.

Digit	Place value	Total value
0	Ones	$0 \times 1 = 0$
Decimal point	.	
0	Tenths	$0 \times 0.1 = 0$
4	Hundredths	$4 \times 0.01 = 0.04$
9	Thousandths	$9 \times 0.001 = 0.009$
5	Ten thousandths	$5 \times 0.0001 = 0.0005$
0	Hundred thousandths	$0 \times 0.00001 = 0$
3	millionths	$3 \times 0.000001 = 0.000003$

5.

Digit	Place value	Total value
0	Ones	$0 \times 1 = 0$
Decimal point	.	
0	Tenths	$0 \times 0.1 = 0$
0	Hundredths	$0 \times 0.01 = 0$
0	Thousandths	$0 \times 0.001 = 0$
5	Ten thousandths	$5 \times 0.0001 = 0.0005$
7	Hundred thousandths	$7 \times 0.00001 = 0.00007$
2	millionths	$2 \times 0.000001 = 0.000002$

6.

Digit	Place value	Total value
0	Ones	$0 \times 1 = 0$
Decimal point	.	
0	Tenths	$0 \times 0.1 = 0$
5	Hundredths	$5 \times 0.01 = 0.05$
7	Thousandths	$7 \times 0.001 = 0.007$
6	Ten thousandths	$6 \times 0.0001 = 0.0006$
8	Hundred thousandths	$8 \times 0.00001 = 0.00008$

Stretch zone

Digit	Place value	Total value
0	Ones	$0 \times 1 = 0$
Decimal point	.	
0	Tenths	$0 \times 0.1 = 0$
0	Hundredths	$0 \times 0.01 = 0$
0	Thousandths	$0 \times 0.001 = 0$
0	Ten thousandths	$0 \times 0.0001 = 0$
4	Hundred thousandths	$0 \times 0.00001 = 0.00004$

Multiplication of decimals

Apply

1. 0.27540 g **2.** 46.4673 m **3.** 58 litres
4. 0.0010 m^2 **5.** 5481.5742 m^2 **6.** 0.15 litres

Stretch zone

77.425 litres

Division of decimals

1. 5.0135 **2.** 0.000025 m **3.** 0.01875
4. sh. 30 **5.** 0.0255 kg per day **6.** sh 120

Stretch zone

1. 456.4455 litres **2.** 3.087 m

1.5 Squares and square roots

Squares of numbers

Apply

1. **(a)** 784 **(b)** 7 225 **(c)** 42 025
2. **(a)** $\frac{9}{16}$ **(b)** $1\frac{11}{25}$ or $\frac{36}{25}$ **(c)** $4\frac{21}{25}$
3. **(a)** 729 **(b)** 7 225 **(c)** 42 025
4. 900 m^2 **5.** $658\frac{7}{9}$ cm^2 **6.** 25 m^2

Stretch zone

1. **(a)** 9.5 m **(b)** 90.25 m^2
2. 2 500 crops

Square roots of numbers

Apply

1. **(a)** 9 **(b)** 25 **(c)** 34
2. **(a)** $\frac{8}{11}$ **(b)** $\frac{13}{16}$ **(c)** $1\frac{1}{2}$
3. **(a)** 0.06 **(b)** 1.4 **(c)** 3.6
4. 95 m **5.** $\frac{4}{7}$ m **6.** 24.2 m

Stretch zone

1. 18 seedlings **2.** 1 020 m

2. Algebra

2.1 Algebraic expressions

Forming algebraic expressions

Apply

1. **(a)** $(23 + d)$ km **(b)** $(d - 15)$ km **(c)** $2d$ km

2. $(t + 3h)°$ **3.** $2p - 5$ **4.** $\frac{3}{4}x$

5. $2m + \frac{1}{2}n$ **6.** $15t - 5k$ **7.** $2(y + \frac{1}{3}y)m$

Stretch zone

1. $15x - 30$ **2.** $2x + 18$

Simplifying algebraic expressions

1. **(a)** $14x + 3$ **(b)** $17y$ **(c)** $7 + 8x$

2. $7k + 18$ **3.** $75t + 35m + 125$ **4.** $3x + 3$

5. $5x - 8$ **6.** $\frac{11}{6}t$ or $1\frac{5}{6}t$

Stretch zone

$3k + 6$

2.2 Linear equations

Forming and solving linear equations

Apply

1. 55° and 85°

2. Length = 7 cm
Width = 5 cm

3. Naserian Ksh 287.50
Ali Ksh 212.50

4. Pencils 5 , Erasers 10

5. Kiptoo's weight 96 kg
Son's weight 32 kg

6. 14 bags

Stretch zone

Gacheru is 30 years old
Mkajuma is 38 years old

Applying linear equations in real life

Apply

1. **(a)** $x = 5$ **(b)** $x = 2$ **(c)** $x = 3$

2. First Hospital 30 boxes , Second Hospital 15 boxes

3. L = 12.6 m W = 8.4 cm

4. Kerubo 35 years old , Rehema 20 years old, Magoma 60 years old

5. 18 children

6. Ksh 75

Stretch zone

1. 20, 22, 24 **2.** Gathungu is 10years old

2.3 Linear inequalities

Forming simple inequalities

Apply

1. **(a)** $19 < 21$ **(b)** 0.2 m > 10 cm **(c)** 200 g < 2 kg

(d) 2 ml < 0.5 L **(e)** $0.3 < 0.7$ **(f)** $\frac{5}{6} > \frac{3}{5}$

2. $3b < 50$ **3.** $n > 2$ m **4.** sh $t < 100$

5. $y > 40$ **6.** $p < 18$

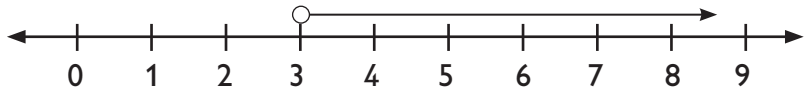
Stretch zone

1. $3t > 27$ **2.** $x \leq 40$ **3.** $4x + 6 < 30$

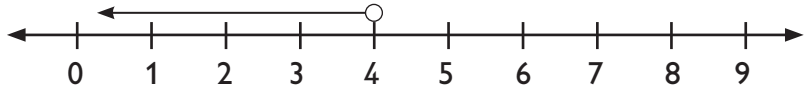
Illustrating simple inequalities on a number line

Apply

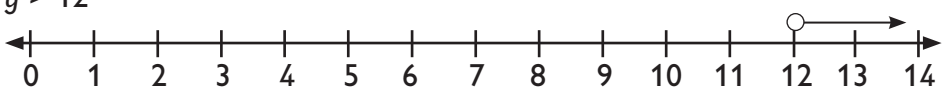
1. **(a)** $x > 3$



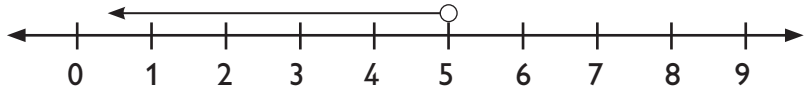
(b) $x < 4$



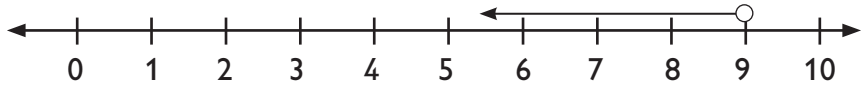
(c) $y > 12$



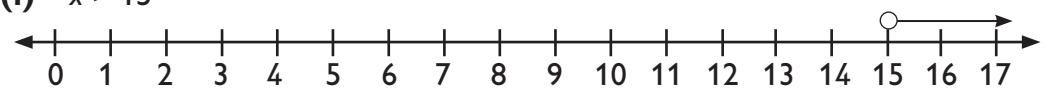
(d) $x < 5$



(e) $x > 4$

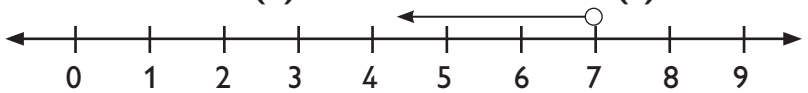


(f) $x > 15$

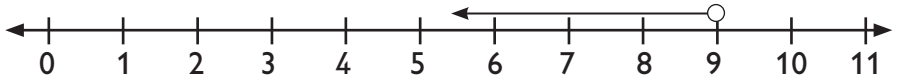


2. **(a)** $x > 5$ **(b)** $x < 7$ **(c)** $x > 0$

3. $x < 7$

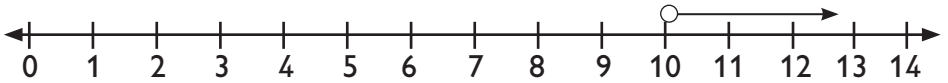


4. $m < 9$



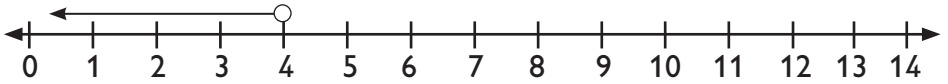
5. **(a)** $x > 10$

(b)



6. **(a)** $3x < 12$

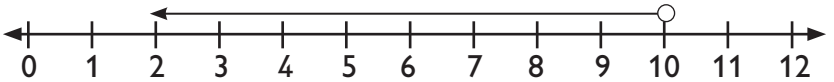
(b)



Stretch zone

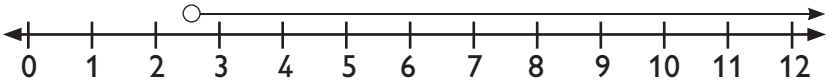
1. **(a)** $2n < 20$

(b) $n < 10$



2. **(a)** $6x > 30$

(b) $x > 5$



Forming compound inequalities

Apply

1. **(a)** $3 < x < 12$ **(b)** $2 < y < 14$ **(c)** $1 < m < 8$

(d) $\frac{4}{5} > n > \frac{1}{2}$ **(e)** $\frac{2}{5} < t < 0.7$ **(f)** $0.1 < b < 0.7$

2. $3 < x < 12$ **3.** $300 < t < 500$ **4.** $25 < x < 32$

5. $70 < y < 80$ **6.** $50 < m < 200$

Stretch zone

1. $20 < x < 30$ **2.** $80 < m < 100$

3. Measurements

3.1 Pythagorean relationship

Sides of a right-angled triangle

Apply

1.	**p** is the base	**m** is the height	**n** is the hypotenuse
2.	**y** is the base	**x** is the height	**z** is the hypotenuse
3.	**s** is the base	**r** is the height	**t** is the hypotenuse
4.	**c** is the base	**b** is the height	**a** is the hypotenuse
5.	**l** is the base	**j** is the height	**k** is the hypotenuse
6.	**g** is the base	**h** is the height	**f** is the hypotenuse

Note: eight and base can be used interchangeably

Identifying Pythagorean relationship

Apply

1. **(a)** Right-angled
(b) Not right-angled
(c) Right-angled
(d) Right-angled
(e) Not right-angled

2. **(a)** Right-angled
(b) Not right-angled
(c) Right-angled

3. 25 squares

4. **(a)** 9 cm **(b)** 26 cm **(c)** 15 cm

Stretch zone

1. 27 cm 2. **It is right-angled**

Application of Pythagorean relationship

Apply

1. 100 m **2.** 17 km **3.** 9 m

4. 4 m **5** 25 km **6.** 6 m

Stretch zone

13 m

3.2 Length

Converting units of length

Apply

1. **(a)** 200 m **(b)** 2 m **(c)** 6 m
(d) 0.27 m **(e)** 24 m **(f)** 0.55 m
2. **(a)** 50 000 cm **(b)** 20 cm **(c)** 700 cm
(d) 2.5 cm **(e)** 30 cm **(f)** 20 cm
3. 1 500 m **4.** 480 cm **5.** 389 m **6.** 728 m

Stretch zone

24.2 m

Addition and subtraction of length

Apply

1. **(a)** 44 m 29 cm **(b)** 41 Dm 3 m
(c) 4 hm 80 m 36 cm **(d)** 9 Dm 7 m 2 dm
2. 176 m 5 dm **3.** 78 hm 9m **4.** 8 hm 85 m 59 cm **5.** 26 m 80 cm 8 mm

Stretch zone

6 hm 4 Dm 8 m 26 cm

Multiplication and division of length

Apply

1. **(a)** 35 m 63 cm **(b)** 66 m 42 cm **(c)** 431 m 48 cm
(d) 9 m 12 cm **(e)** 20 m 5 cm **(f)** 3 m 40 cm
2. 7 m 84 cm **3.** 2401 m 44 cm **4.** 12 cm 3 mm **5.** 4 m 20 cm

Stretch zone

640 m 0 cm

Perimeter of plane shapes

Apply

1. **(a)** 56 cm **(b)** 60 cm **(c)** 35 m **(d)** 38 cm

2. 12.4 m **3.** 596 m **4.** 92 m **5.** 2 400 m **6.** 60 cm

Stretch zone

1. 12 m **2.** 8.5 cm

Circumference of a circle

Apply

1. **(a)** 37.704 cm **(b)** 20.568 cm **(c)** 33.852 cm **(d)** 55.704 cm
2. 44 cm **3.** 308 cm **4.** 5.188 cm **5.** 95.48 cm **6.** 35.2 m

Stretch zone

1. 804.352 cm **2.** 4 times **3.** 75.408 cm

3.3 Area

Square metre, acre and hectare as units of measuring area

Apply

1. 19425.6 m^2 **2.** 7 ha **3.** 14500 m^2 **4.** 0.3 acres

Stretch zone

1. 48 kg **2.** 72846 m^2 **3.** 87.69 m^2

Area of Rectangles and Parallelograms

Apply

1. **(a)** 209 cm^2 **(b)** 198 cm^2
2. 1 435 cm^2 **3.** 1 080 cm^2 **4.** 3 900 m^2 **5.** 336 cm^2

Stretch zone

1. 1 036 tiles **2.** 12 m

Area of a rhombus

Apply

1. **(a)** 300 cm^2 **(b)** 1 57.5 cm^2
2. 369 m^2 **3.** 175 m^2 **4.** 7.5 m **5.** 5.2 m

Stretch zone

1. 13 334 tiles **2.** 1 516 cabbages

Area of a trapezium

Apply

1. **(a)** 70 cm^2 **(b)** 136 cm^2 **(c)** 220 cm^2 **(d)** 52.5 cm^2
2. 30 m^2 **3.** 45 m^2 **4.** 9 m **5.** 7 m

Stretch zone

1. 64 cm^2 **2.** 4.05 m

Area of circles

Apply

1. **(a)** 1386 cm^2 **(b)** 38.5 cm^2 **(c)** 346.5 cm^2
(d) 154 cm^2 **(e)** 346.5 cm^2 **(f)** $\frac{11}{14}a^2$
2. 7 855 cm^2 **3.** 13.86 cm^2 **4.** 6.16 m^2 **5.** 4.91 m^2

Stretch zone

1. 7 546 cm^2 **2.** 11 lorries

Area of borders and combined shapes

Apply

1. **(a)** 40 cm^2 **(b)** 24 cm^2 **(c)** 68 cm^2 **(d)** 118 cm^2
2. 123.432 cm^2 **3.** 7.7 m^2 **4.** 20.96 m^2 **5.** 1450.27 m^2
6. 95.556 m^2

Stretch zone

1. Area of the wall = 6 m^2, painting covers 4 m^2. The painting will not cover the wall entirely.
2. 54 m^2

3.4 Volume and capacity

Conversion of cubic metres and cubic centimetres

Apply

1. **(a)** 7 000 000 cm^3 **(b)** 230 000 cm^3 **(c)** 2 140 000 cm^3
(d) 17 000 000 cm^3 **(e)** 3 500 000 cm^3 **(f)** 4 540 000 cm^3
(g) 12 800 cm^3 **(h)** 15 480 000 cm^3 **(i)** 730 000 cm^3
2. **(a)** 48 m^3 **(b)** 0.054 m^3 **(c)** 432 m^3
(d) 0.0124 m^3 **(e)** 0.00138 m^3 **(f)** 0.22636 m^3
3. 0.0504 m^3 **4.** 0.025 m^3 **5.** 36 000 000 cm^3 **6.** 189 000 cm^3

Stretch zone

1. 20 times **2.** 187 packets

Volume of cubes and cuboids

Apply

1. **(a)** 1 000 cm^3 **(b)** 64 cm^3 **(c)** 850 cm^3 **(d)** 270 cm^3

2. 0.00324 m^3 **3.** 512 000 cm^3 **4.** 4 cm **5.** 7 m **6.** 15 cm

Stretch zone

1. 60 cm **2.** 864 cm^3 **3.** 1 000 cm^3

Volume of a cylinder

Apply

1. **(a)** 8 169.2 cm^3 **(b)** 342 163 cm^3

2. 57 262.95 cm^3 **3.** 8 800 cm^3 **4.** 12.37 cm **5.** 10 cm **6.** 10.5 m

Stretch zone

1. 43 bottles **2.** 33 933 .6 cm^3

Relationship between volume and capacity

Apply

1. **(a)** 2 700 litres **(b)** 16 000 litres **(c)** 45 litres
(d) 0.042 litres **(e)** 2.2505 litres **(f)** 4.58 litres

2. **(a)** 0.008 m^3 **(b)** 0.000002 m^3 **(c)** 0.00215 m^3

3. **(a)** 900 cm^3 **(b)** 245 000 cm^3 **(c)** 8 250 000 cm^3

4. **(a)** 0.02 m^3 **(b)** 20 000 cm^3

5. 7 800 litres **6.** 750 ml

Stretch zone

h = 25 cm

Capacity of containers

Apply

1. 32 000 litres **2.** 52.5 litres **3.** 27 000 000 litres

4. 291.06 ml **5.** 0.512 litres

Stretch zone

1. 0.06 cm

2. Water was 8 400 ml. People took 6 000 ml. There was enough water for the people.

3.5 Time, distance and speed

Conversion of units of measuring time

Apply

1. **(a)** 1 080 s **(b)** 10 800 s **(c)** 8 460 s **(d)** 58 800 s **(e)** 84 600 s

2. **(a)** $1\frac{1}{3}$ h **(b)** $1\frac{3}{4}$ h **(c)** $2\frac{3}{4}$ h **(d)** $3\frac{3}{4}$ h **(e)** $5\frac{1}{4}$ h **(f)** $7\frac{1}{4}$ h

3. 2 700 s **4.** 1 530 s **5.** $3\frac{1}{12}$ h **6.** $7\frac{8}{15}$ h

Stretch zone

1. 22 500 s **2.** 13 h 55 mins

Conversion of units of measuring distance

Apply

1. **(a)** 2.5 km **(b)** 2.115 km **(c)** 9.821 km
(d) 17.2 km **(e)** 0.55 km **(f)** 86.22 km

2. **(a)** 5000 m **(b)** 19 000 m **(c)** 223 000 m
(d) 4 700 m **(e)** 24 080 m **(f)** 23 km

3. 1 234 000 m **4.** 15 250 m **5.** 3.125 km **6.** 0.75 km

Stretch zone

1. 184 km **2.** 250 000 m

Calculation of speed

Apply

1. **(a)** 18 m/s **(b)** 10 m/s **(c)** 3 m/s **(d)** 20 m/s

2. **(a)** 60 km/h **(b)** 200 km/h **(c)** 62.5 km/h **(d)** 160 km/h

3. 12 m/s **4.** 671 km/h **5.** 150 km/h **6.** 80 km/h

Stretch zone

1. 9 000 km/h **2.** $27\frac{29}{33}$ km/h

Conversion of units of measuring speed

1. **(a)** $6\frac{2}{3}$ m/s **(b)** 25 m/s **(c)** 30 m/s
(d) $33\frac{1}{3}$ m/s **(e)** 6 m/s **(f)** $56\frac{1}{4}$ m/s

2. **(a)** 36 km/h **(b)** 72 km/h **(c)** 144 km/h
(d) 189 km/h **(e)** 234 km/h **(f)** 226.8 km/h

3. 20 m/s **4.** 21.6 km/h

5. **(a)** 72km/h **(b)** 20 m/s
6. **(a)** 10 m/s **(b)** 36 km/h

Stretch zone

1. **(a)** $13\frac{1}{3}$ m/s **(b)** 48 km/h
2. **(a)** 1 km/h **(b)** $\frac{5}{18}$ m/s

3.6 Temperature

Conversion of units of measuring temperature

Apply

1. **(a)** 290 K **(b)** 303 K **(c)** 277.21 K **(d)** 394 K
2. **(a)** 6°C **(b)** 36°C **(c)** 17.5°C **(d)** 117°C
3. 312 K **4.** 61°C **5.** 1°C

Stretch zone

Substance B

Working out temperature

Apply

1. 296 K **2.** 335 K 3. 92°C **4.** 17°C

Stretch zone

1. 220 **2.** 13

3.7 Money

Profit and loss

Apply

1. sh 1 560 **2.** sh 3 846 3. sh 5 400
4. sh 1 450 **5.** sh 21 200 **6**. sh 10 145

Stretch zone

1. sh 1 920 **2.** sh 8 200 **3.** sh 800

Percentage profit and loss

Apply

1. $33\frac{1}{3}\%$ **2.** $9\frac{13}{18}\%$ **3.** $16\frac{2}{3}\%$
4. 10% **5.** sh 12 000 **6.** sh 937 500

Stretch zone

1. sh 1 800 **2.** sh 33

Discount and percentage discount

Apply

1. sh 130 **2.** sh 59 800 **3.** sh 1 500
4. sh 10% **5.** 20% **6.** sh 60 000

Stretch zone

1. $7\frac{1}{2}\%$ **2.** sh 29 000 **3.** sh 48

Commission and percentage commission

Apply

1. **(a)** sh 5 760 **(b)** sh 8 640
2. **(a)** $1\frac{2}{3}\%$ **(b)** $\frac{15}{16}\%$
3. sh 77 000 **4.** sh 1 800 000 **5.** sh 66 300 **6.** $5\frac{5}{7}\%$
7. sh 450 000

Stretch zone

1. sh 900 000 **2.** sh 128 000 3. sh 40 440

Bills

Apply

1.

Item	Quantity	Unit cost	Total cost
Flour	3 kg	sh 110	sh 330
Sugar	2 kg packet	sh 399	sh 399
Soap	2 bars	sh 154	sh 308
Milk	3 litres	sh 60	sh 180
Kerosene	$1\frac{1}{2}$ litres	sh 176	sh 264
Total			sh 1 481

2. **(a)**

Item	Quantity	Unit cost	Total cost
Material	$2\frac{1}{2}$ m	sh 450	sh 1 125
Buttons	8 buttons	sh 10.50	sh 84
Thread	4 reels		sh 125
Labour			sh 1 850
Total			sh 3 184

(b) sh 816

3.

Item	Quantity	Unit cost	Total cost
Unga	2 packets	sh 260	sh 520
Bread	3 loaves	sh 150	sh 450
Milk	$4\frac{1}{2}$ litres	sh 60	sh 270
Sugar	$3\frac{2}{3}$ kg		sh 375
Total			sh 1 615

Balance = sh 385

4.

Item	Quantity	Unit cost	Total cost
300ml bottles of soda	8 crates	sh 720	sh 2 160
500ml bottles of soda	70 crates	sh 1 440	sh 100 800
1 litre bottles of sod	4 crates	sh 2 160	sh 8 640
Transport			sh 500
Total			sh 112 100

Stretch zone

1. **(a)**

Item	Quantity	Unit cost	Total
Ugali with chicken	10	sh 300	sh 3 000
Chips with fish	6	sh 420	sh 2 520
Rice with beef	6	sh 260	sh 1 560
Total			sh 7 080

(b) Balance sh 920

2. **(a)**

Item	Quantity	Unit cost	Total
Sugar	2 kg	sh 125	sh 250
Rice	$\frac{1}{2}$ kg	sh 108	sh 54
Milk	3 packets	sh 60	sh 180
Margarine	A tin	sh 390	sh 390
Total			sh 874

(b) sh 74

Inland postal charges

1. Sh 320 **2.** Sh 325 **3.** Sh 2 980 **4.** Sh 960

International surface mail postal charges

1. Sh 2 960 **2.** Sh 2 565 **3.** Sh 4 245
4. Sh 2 595 **5.** Sh 1 770 **6.** Sh 4 785

International air mail postal charges

1. Sh 5 220 **2.** Sh 16 620 **3.** Sh 5 065 **4.** Murumbi by sh 2 670

Surface airlifted mails

1. Sh 6 795 **2.** Sh 9 445 **3.** 0.7 kg parcel, sh 915 **4.** Sh 13 565

Express Mail Services (EMS)

1. Sh 42 020 **2.** Sh 74 367 **3.** Sh 84 999 **4.** Sh 119 668

Money orders

1. **(a)** **(i)** Sh 550 **(ii)** Sh 79950
(b) **(i)** Sh 450 **(ii)** Sh 79 850 **(iii)** Sh 100
2. **(a)** Mbenjo sh 825, Mawira sh 880
(b) Mbenjo sh 23 825, Mawira sh 40 880
(c) Mawira by sh 55
3. Sh 33 240
4. **(a)** South Africa sh 3 730, Egypt sh 2 750 **(b)** Sh 156 280
5. Sh 95 730
6. Musao paid sh 760 more

Mobile money services and transactions

1. **(a)** Sh 75 **(b)** Sh 5067 **(c)** Sh 67
2. **(a)** Sh 20 282 **(b)** Sh 20 000

3. **(a)** Sh 37 595 **(b)** Sh 105 **(c)** Sh 38805

Stretch zone

(a) Sh 35100 **(b)** Sh 105 **(c)** Sh 270 **(d)** Sh 35475

4 Geometry

4.1 Angles

Angles on a straight line

Apply

1. **(a)** 52° **(b)** 44° **(c)** 154° **(d)** 82.5°

2. VAW = 30°, WAX = 30°, XAY = 90°, YAZ = 30°

3. 14.5° **4.** 5° **5.** 24° **6.** 46°, 85°, 49°

Stretch zone

1. a = 72°, b = 36°, c = 12°, d = 60° **2.** $73\frac{1}{3}°, 36\frac{2}{3}°, 70°$

Angles at a point

Apply

1. **(a)** d = 156° **(b)** n = 110°, p = 110°, q = 70° **(c)** 232° **(d)** 49°, 147°

2. 267° **3.** 140° **4.** 146°, 137°, 77°

Stretch zone

1. $25\frac{5}{7}°$ **2.** 72° **3.** 90°

Angles on a transversal

Apply

1. m = 70°, n = 110°, p = 110° **2.** w = 72°, x = 55°

3. x = 20°, y = 80°, z = 100° **4.** H = 60°, k = 60°, g = 44°

5. a = 70°, b = 65°

Stretch zone

1. 61° **2.** m = 270° **3.** y = 9° **4.** n = 58°, p = 50°, q = 72°

Angles in a parallelogram

Apply

1. x = 145°, t = 145°, n = 35° **2.** m = 42°, s=110°, y = 28°, x = 110

3. r = 110°, t = 70° m = 110°, p = 70°

4. r = 130°, n = 15°, t = 15°, m = 35°
5. x = 32°, y = 148°
6. u = 70°, v = 50°, w = 60°
7. t = 86

Stretch zone

1. Angle 5x = 145°, angle 7y = 35°
2. Angle 3x = 60°, angle 6x = 120°
3. Angle = 150°

Angles properties of polygons

Apply

1. **(a)** 4 **(b)** Quadrilateral
2. 720° **3.** 720° **4.** 20°
5. 86°, 94°, 53° 127° **6.** 72°, 72°, 108°,108°

Stretch zone

1. 4 sides

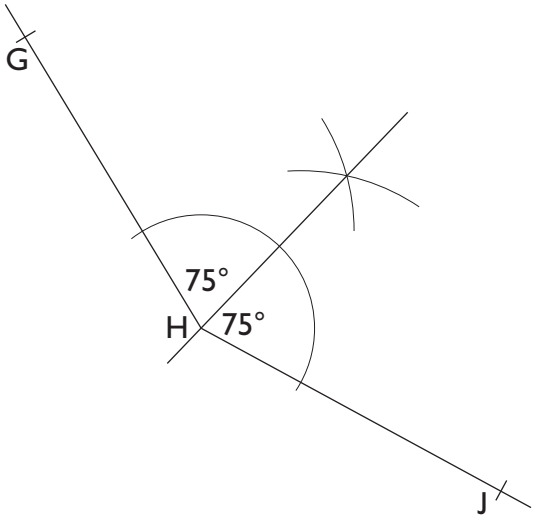
4.2 Geometrical constructions

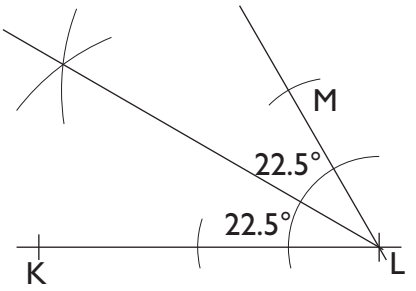
Measuring and bisecting angles

Constructing angles

Apply

1. **(a)** **(i)** ∠GHJ = 150° **(ii)** ∠KLM = 45°
(b) **(i)** **(ii)**





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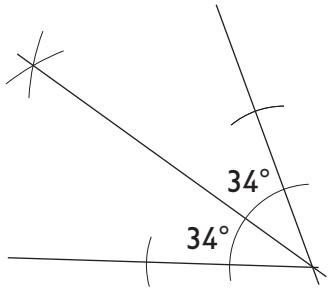
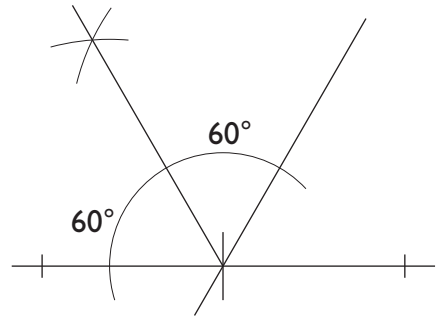
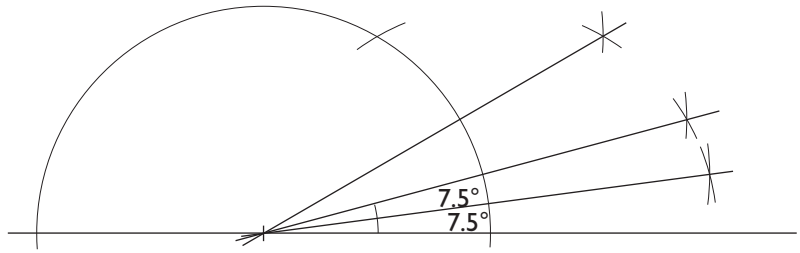


3. Obtuse angle (angles will vary)



Stretch zone

1.



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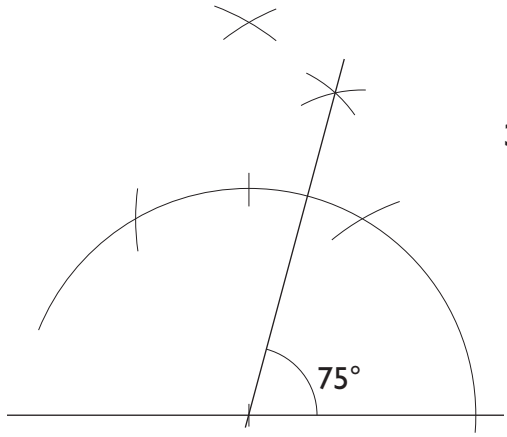

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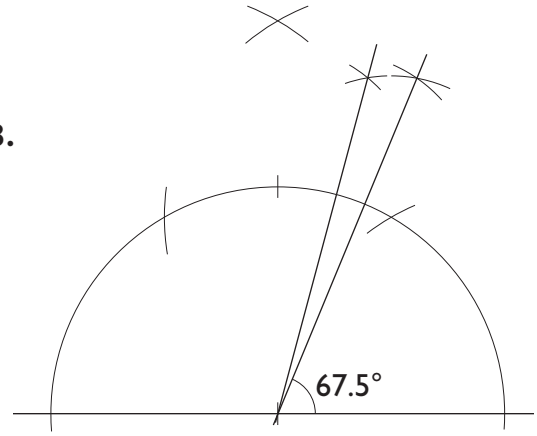
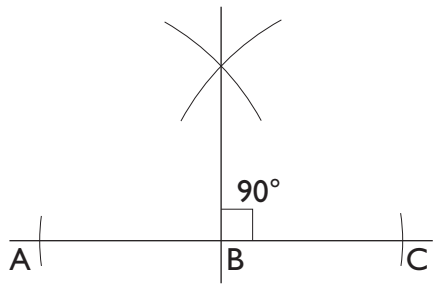


Constructing angles

1.



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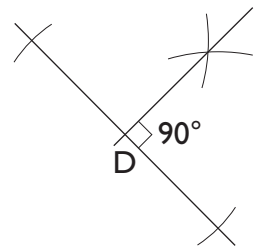

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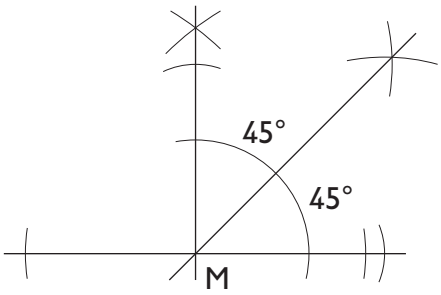

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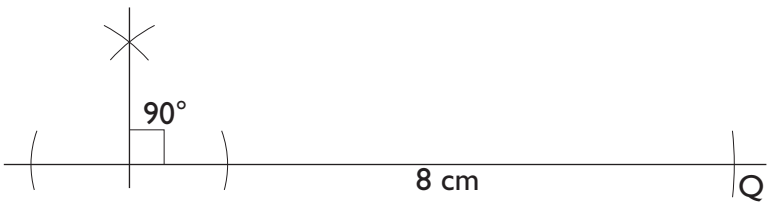

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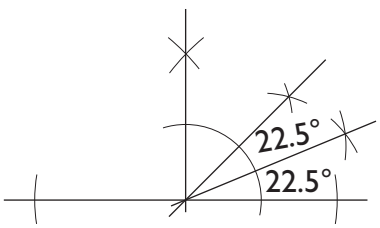

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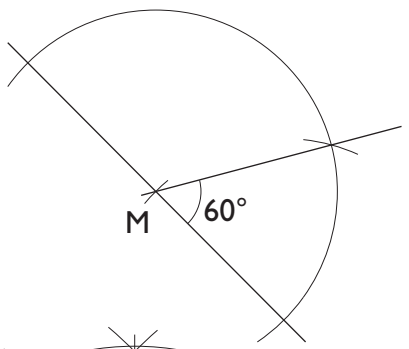

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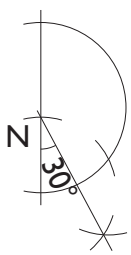

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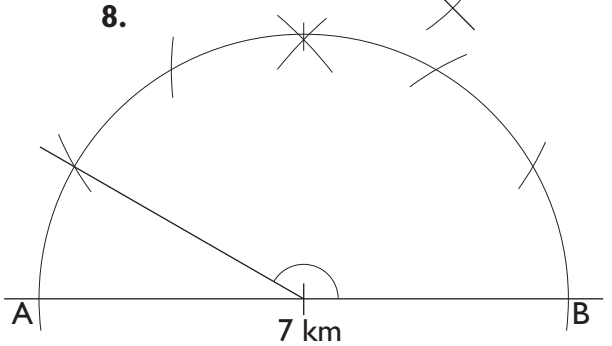

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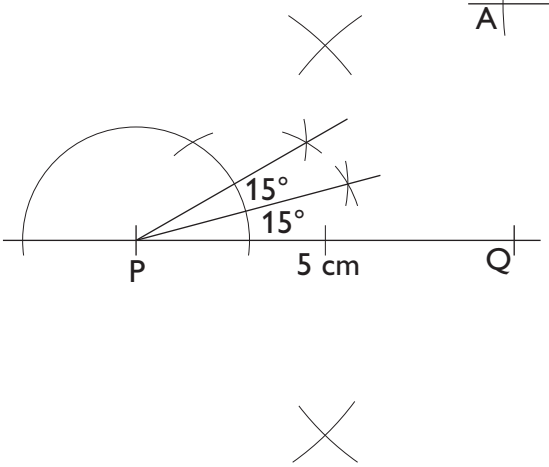

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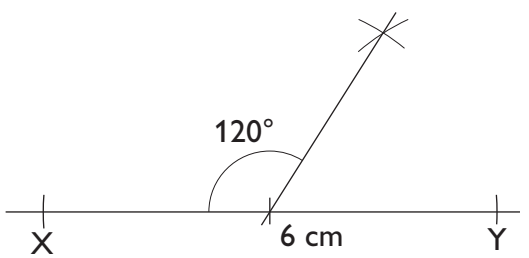

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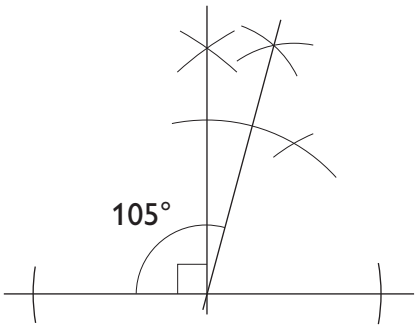
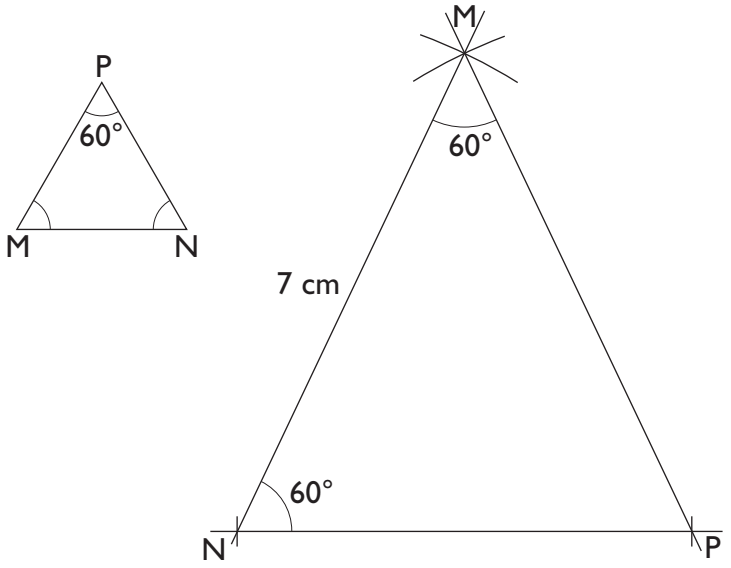


Constructing triangles

1.



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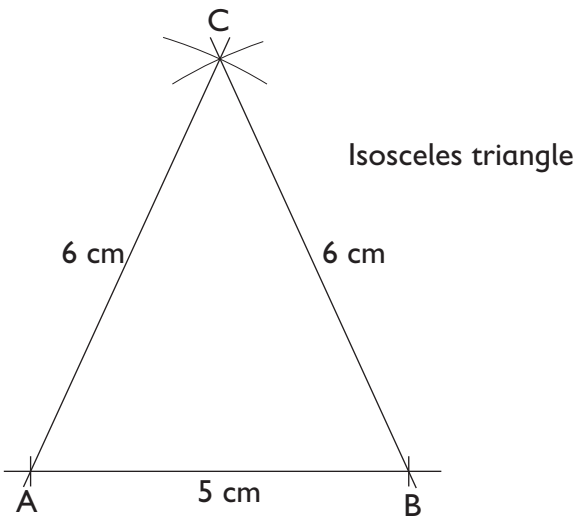

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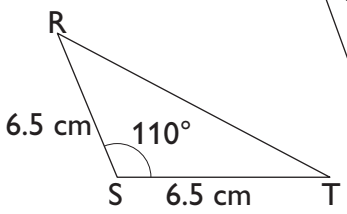
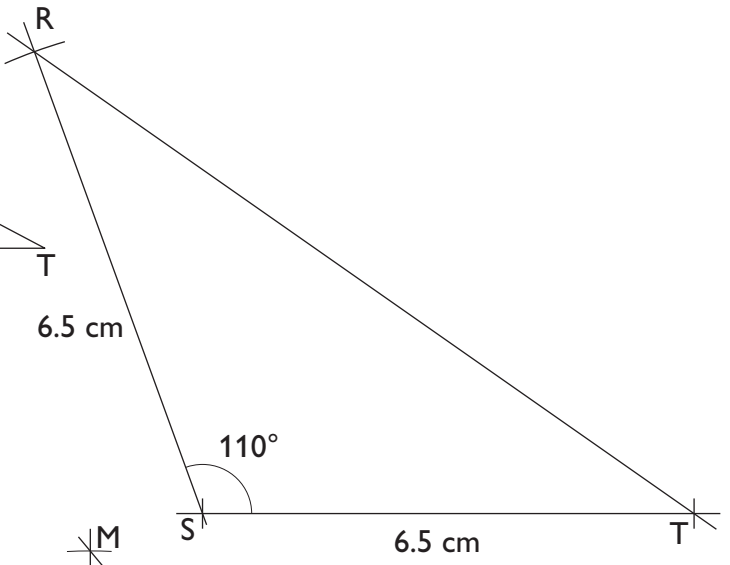
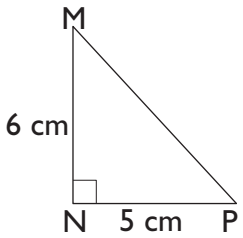
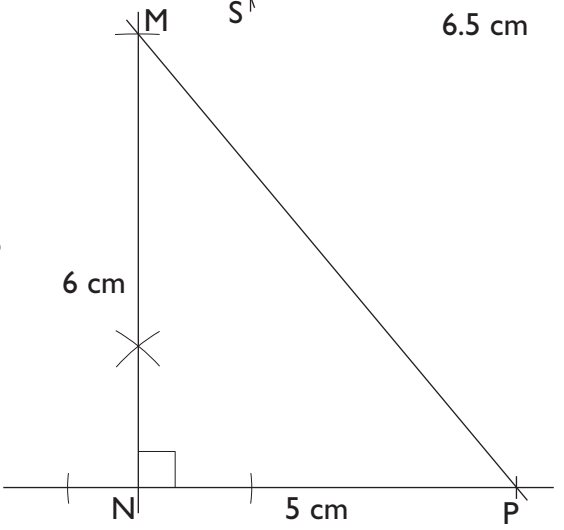


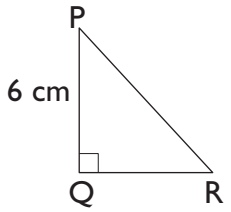


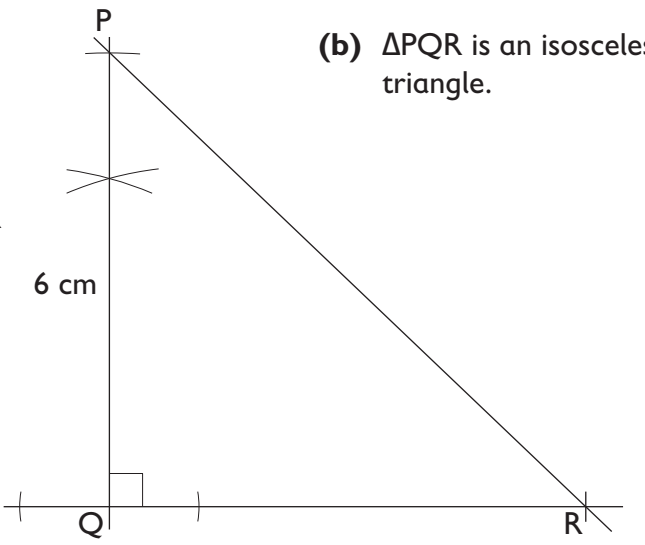
4.





5. **(a)**





(b) ΔPQR is an isosceles triangle.

Constructing circles

Ensure you construct circles of the correct radii or diameters.

5. Data handling and probability

5.1 Data handling

Representing data using a frequency distribution table

Apply

1.

Foods	Tally marks	Number of customers
Ugali	## ## ## ///	18
Chapati	## ## ##	15
Rice	## ##	10
Matoke	## /	6
Fish	///	3

2.

Marks	Tally marks	Number of learners
36	##	5
38	## ///	8
40	## ///	8
41	## /	6
42	///	3
43	/	1
45	## ///	8
48	/	1

3.

Temperatures	Tally marks	Number of specimens
15.8	##	5
15.9	/	1
16.7	////	4
16.9	## //	7
17.0	///	3
17.1	///	3
17.3	///	3
18.0	////	4

4.

Types of vehicles	Tally marks	Number of vehicles
Lorries	𝍸 𝍸 𝍸 𝍸 ////	24
Cars	𝍸 𝍸 /	16
Pick-ups	𝍸 /	6
Buses	𝍸 𝍸 //	12
Motorbikes	𝍸 ///	8
Tuktuk	𝍸 𝍸 𝍸 𝍸	20
Trucks	𝍸 𝍸 𝍸 //	17

Choosing a suitable scale for graphs

Apply

Note: Learners should choose a scale that covers more than three-quarters of the graph space.

1. 1 cm represents 10 patients **2.** 1 cm represents 100 books

3. 1 cm represents 0.5 ha

Stretch zone

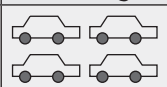
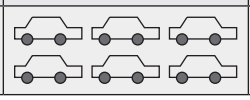
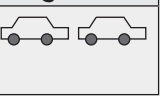
1 cm represents $\frac{1}{2}$ hour

Representing data using pictographs

1.

Learners	Akinyi	Pendo	Wacu	Ali
Number of seedlings	♣♣♣♣	♣♣	♣♣♣♣♣♣♣♣♣	♣♣♣♣♣

2.

Months	January	February	March	April	May
Number of vehicles					

3.

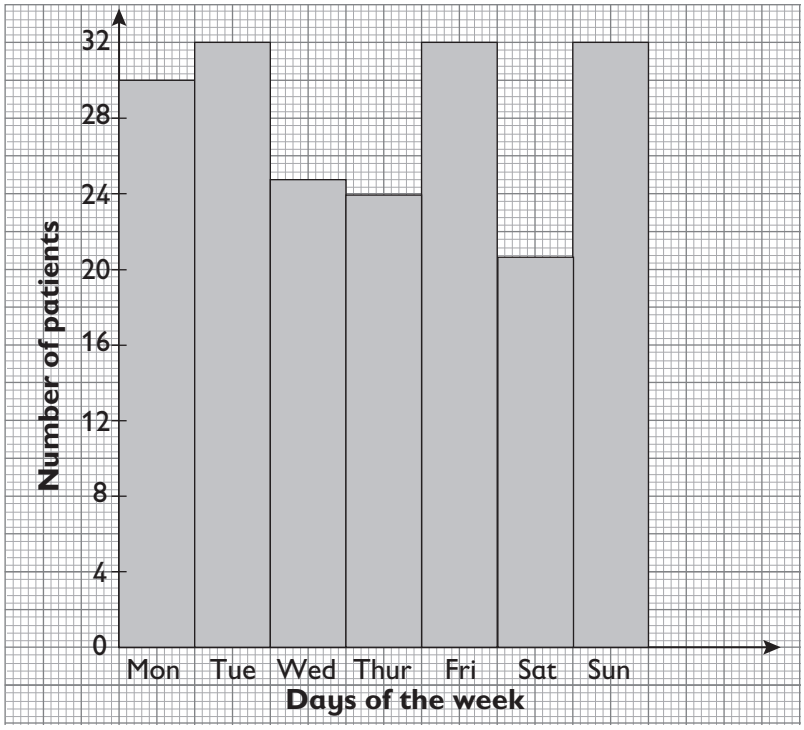
Animals	Cows	Goats	Sheep	Hens
Number of animals	Pic 4 ANIMALS SYMBOL	Pic 6	Pic 10	Pic 12

Representing data using bar graphs

A bar graph of number of patients who visited a clinic in a certain week.

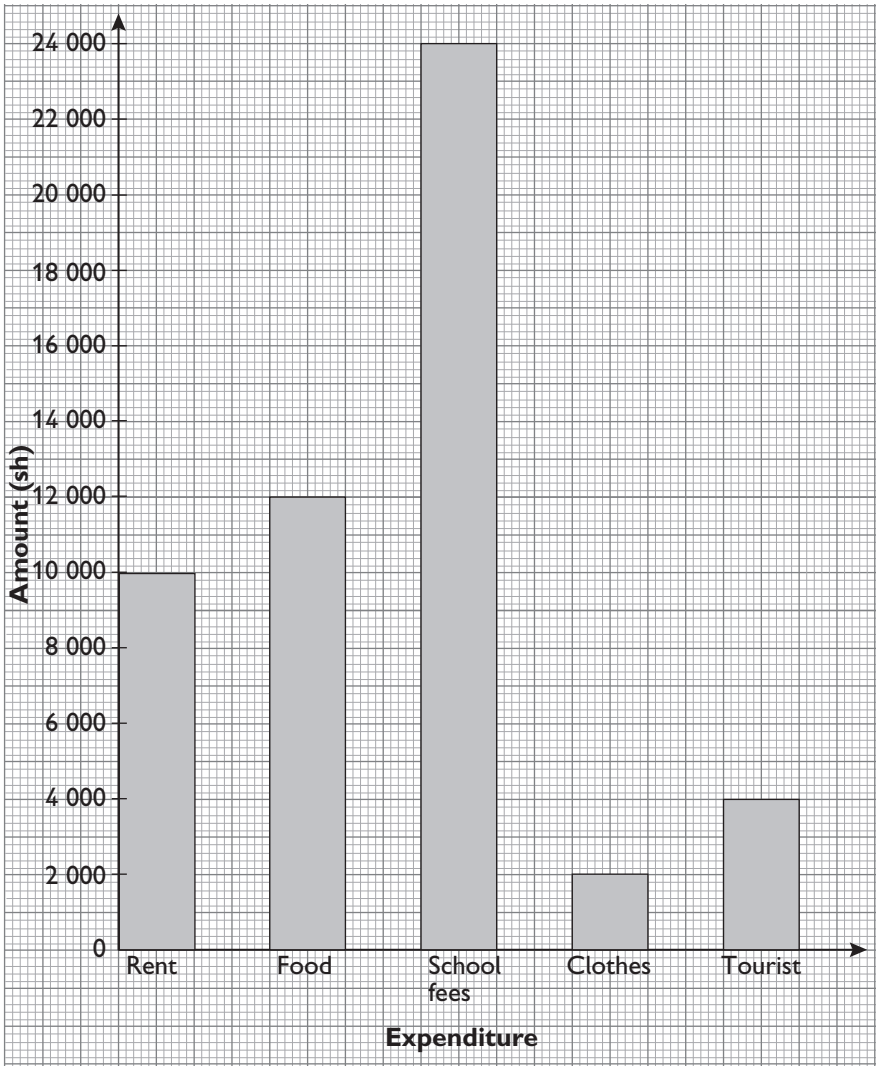
Scale: Vertical 1 cm represents 4 patients

1.



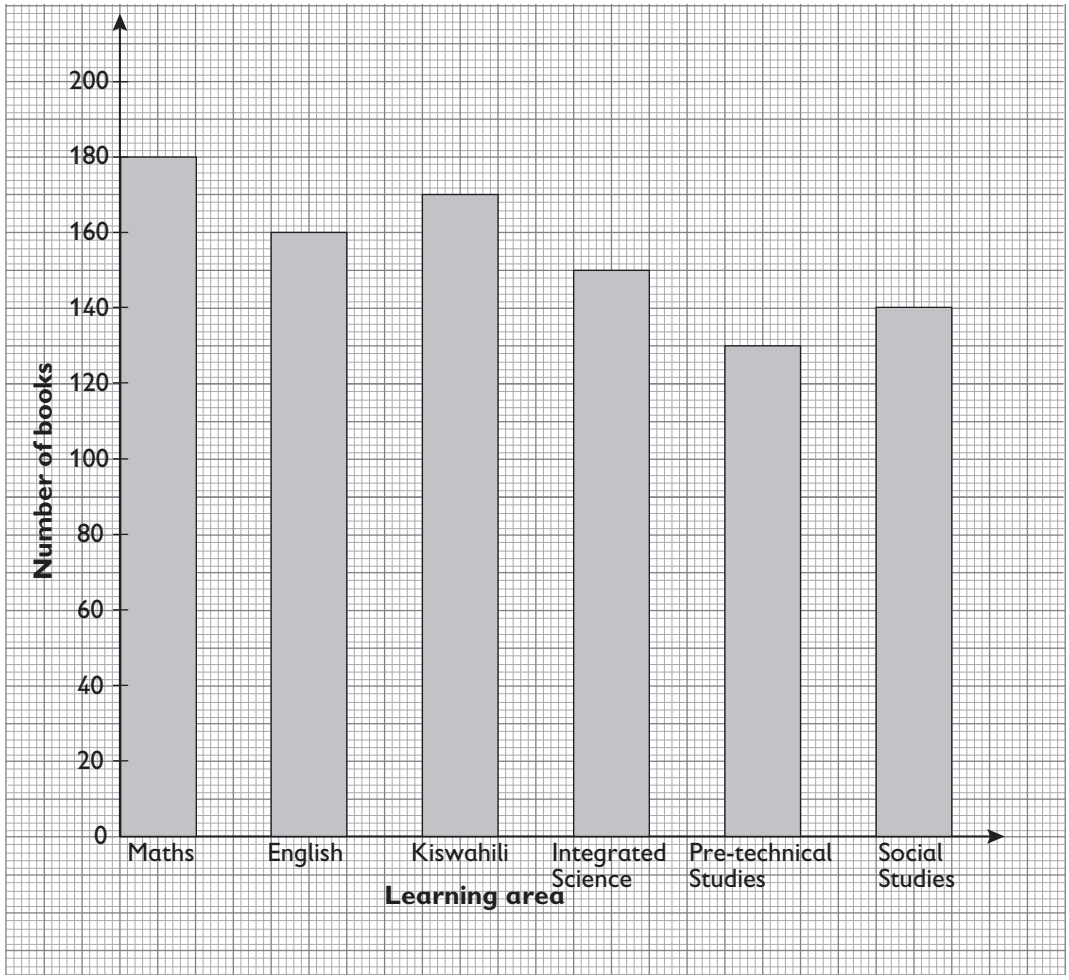
2. A bar graph to represent Matano's expenditure.

Scale: Vertical 1 cm represents sh 2 000



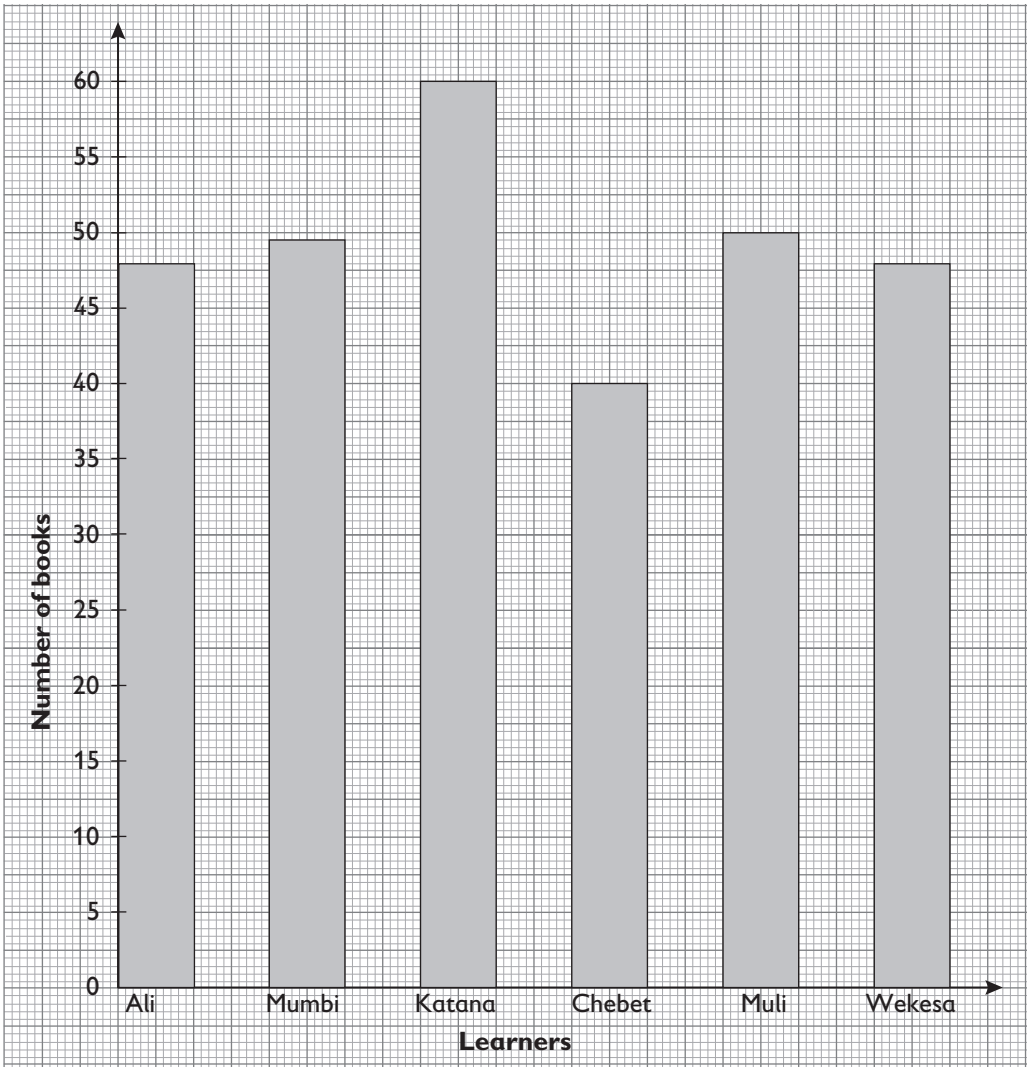
3. A bar graph representing number of books in a library.

Scale: Vertical 1 cm represemts 20 books



4. A bar graph representing learners in kilograms

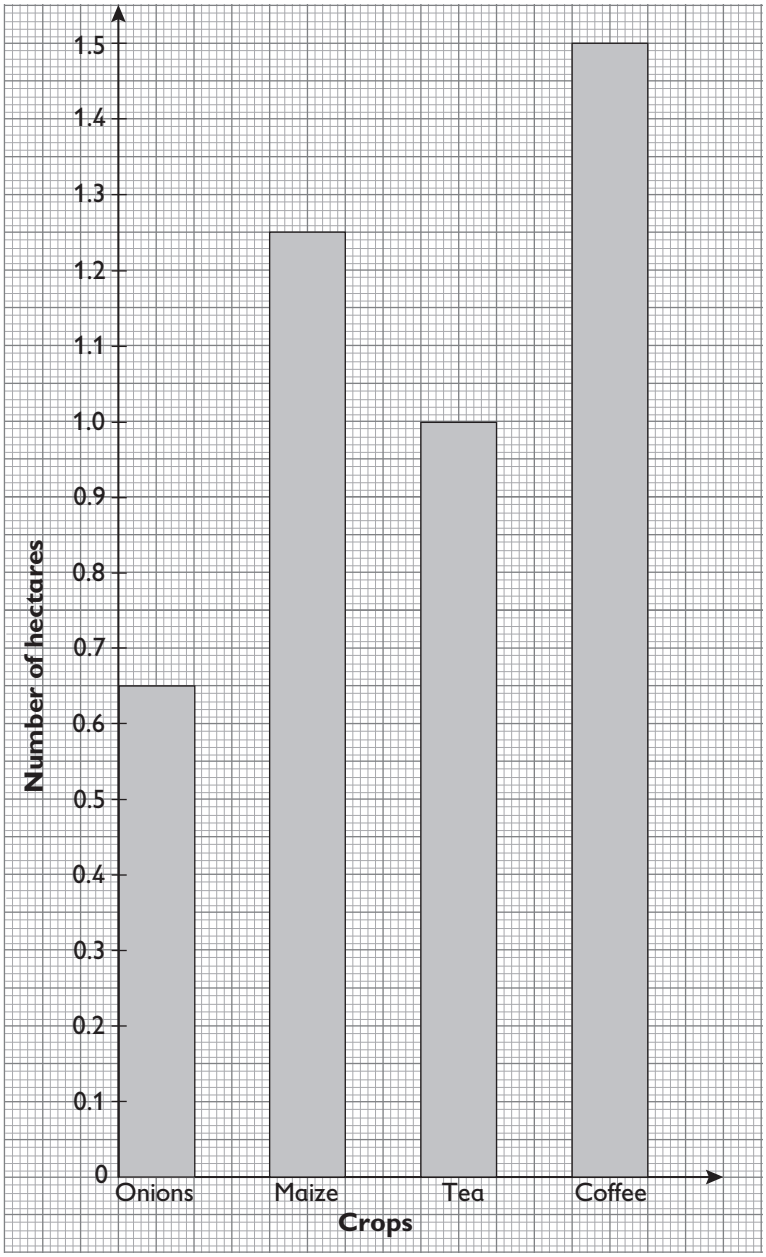
Scale: Vertical 1 cm represents 5 kilograms



Stretch zone

A bar graph representing Wanda's utilisation of his piece of land.

Scale: Vertical 1 cm represents 0.1 hectare



Interpreting bar graphs

Apply

1. **(a)** Size 6 **(b)** 60 pairs **(c)** Size 11

2. **(a)** Tuesday **(b)** 80 cartons **(c)** 10 cartons

3. **(a)** 200 litres **(b)** Between 12:00 noon and 1:00 p.m

(c) 1 400 litres **(d)** 1 300 litres

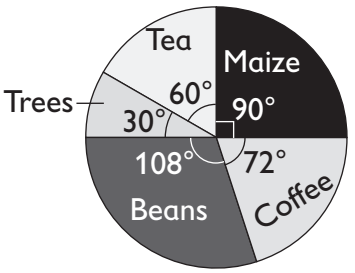
Stretch zone

(a) 15 families **(b)** 6 families

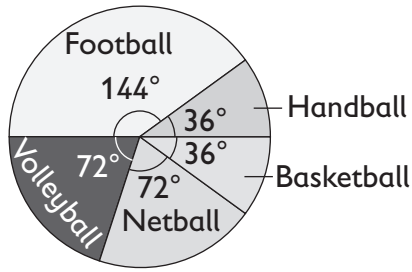
(c) 9 families **(d)** 165 children

Representing data using pie charts

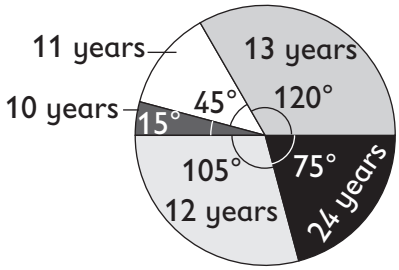
1.



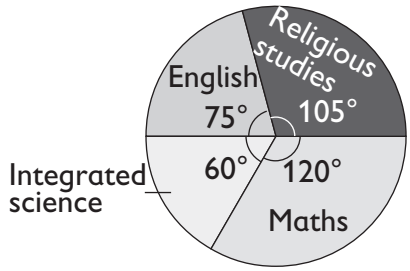
2.



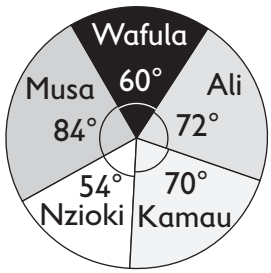
3.



4.



5.



Interpreting pie chart

Apply

1. **(a)** 60 goats, 75 cattle, 40 sheep and 5 hens

(b) 20 **(c)** 35

2. **(a)** 40° **(b)** Sh 32 000 **(c)** Sh 24 000

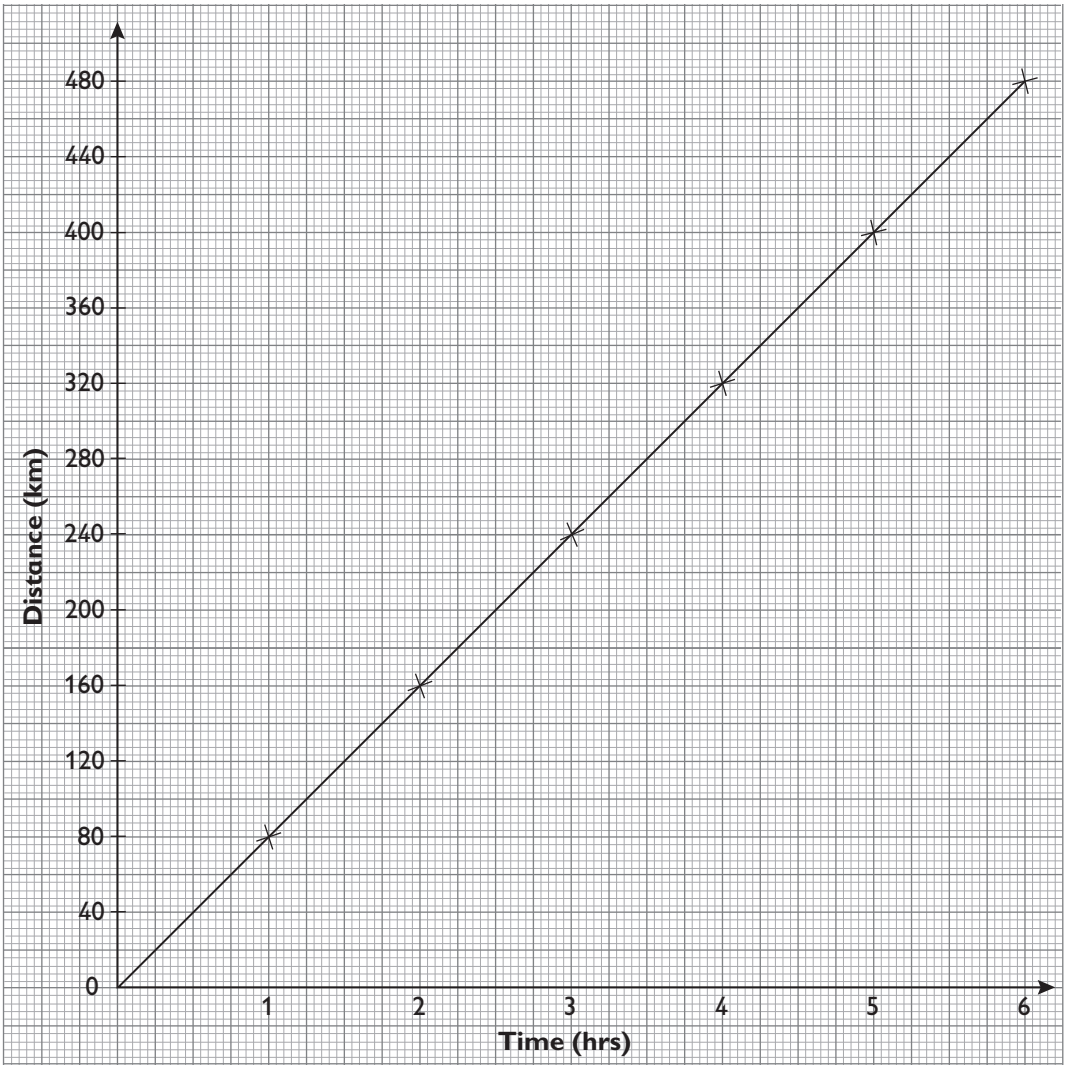
Stretch zone

(a) 120° **(b)** Sh 4 500 **(c)** Sh 1 500

Representing data using line graphs

1. A line graph representing a motorists journey.

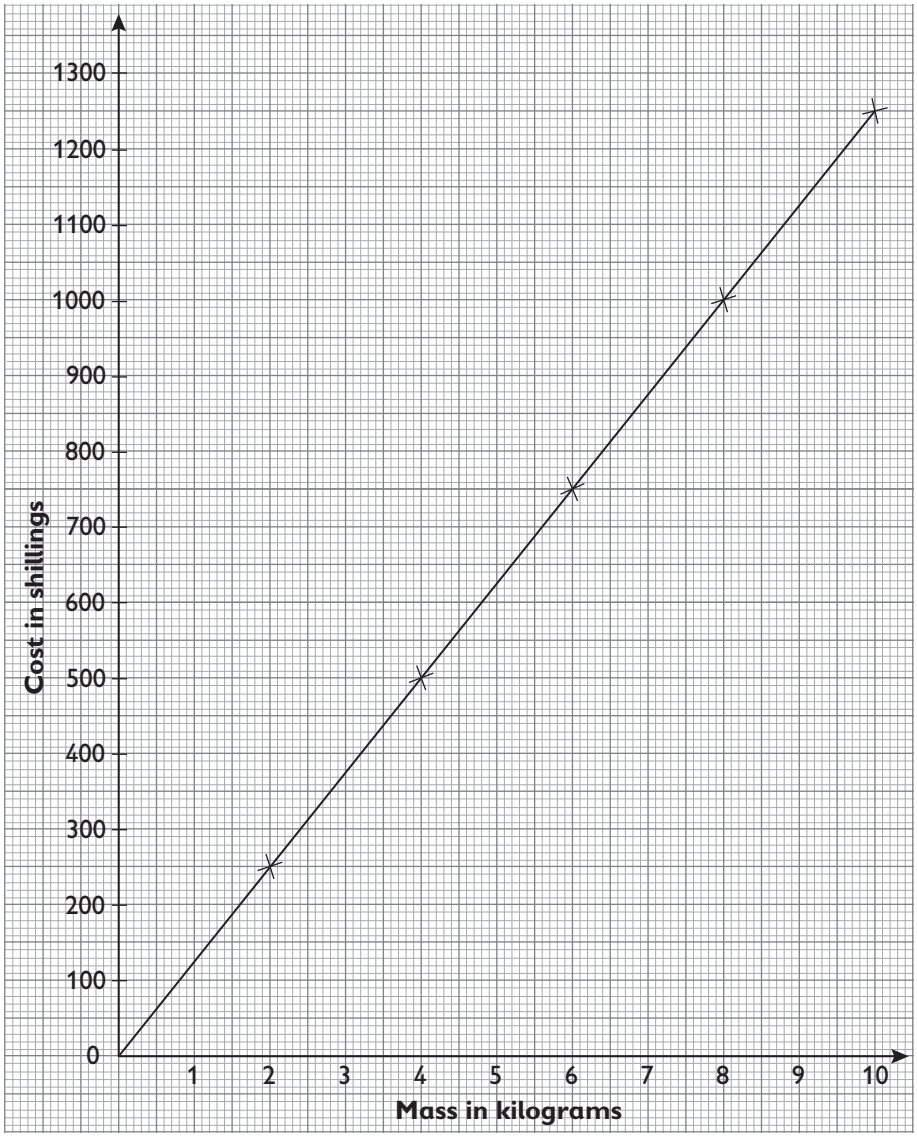
Scale: Horizontal 1 cm represents 30 minutes
Vertical 1 cm represents 40 kilometres



2. A line graph representing cost of packets of sugar.

Scale: Horizontal 1 cm represents 1 kg

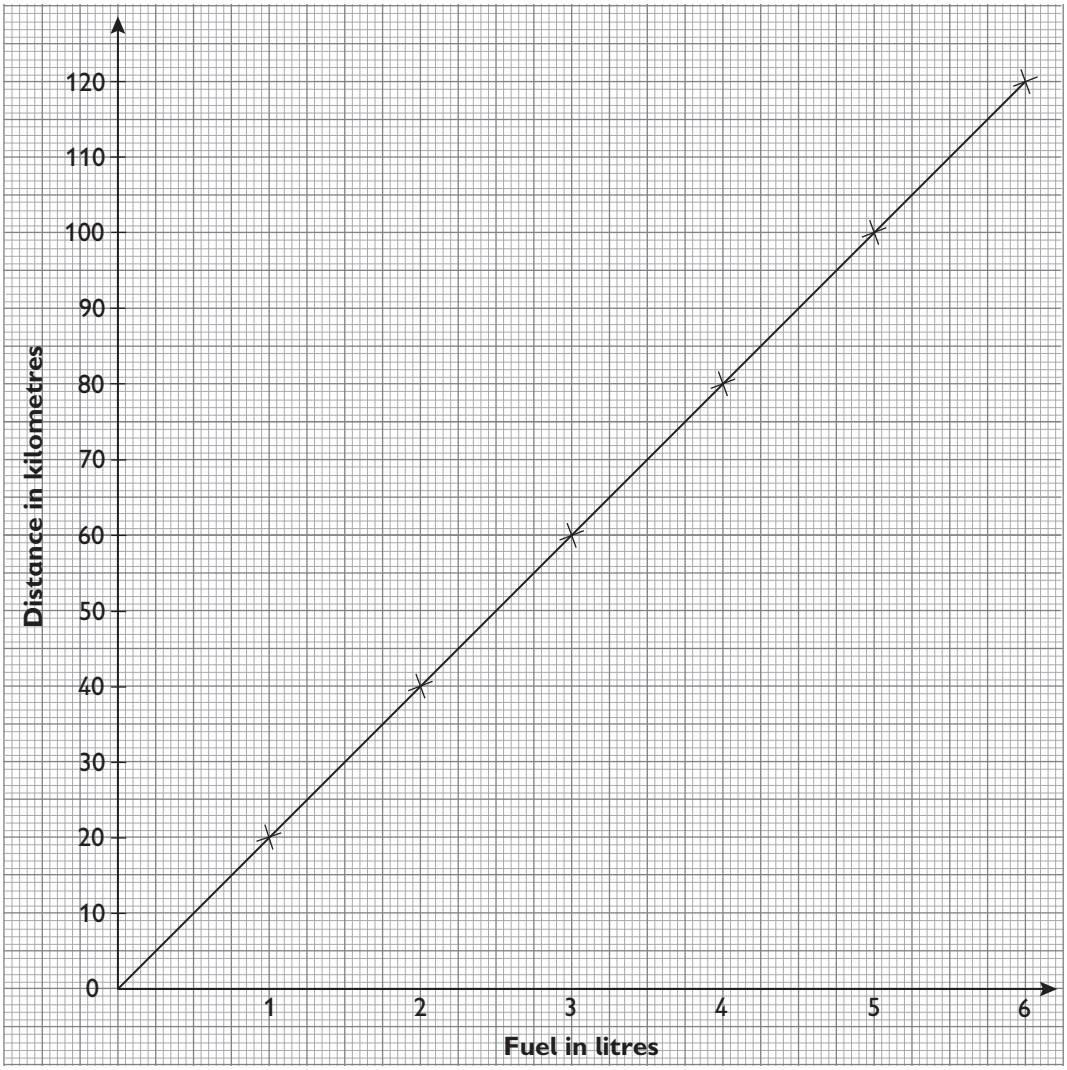
Vertical 1 cm represents sh 100



3. A line graph representing a car's fuel consumption

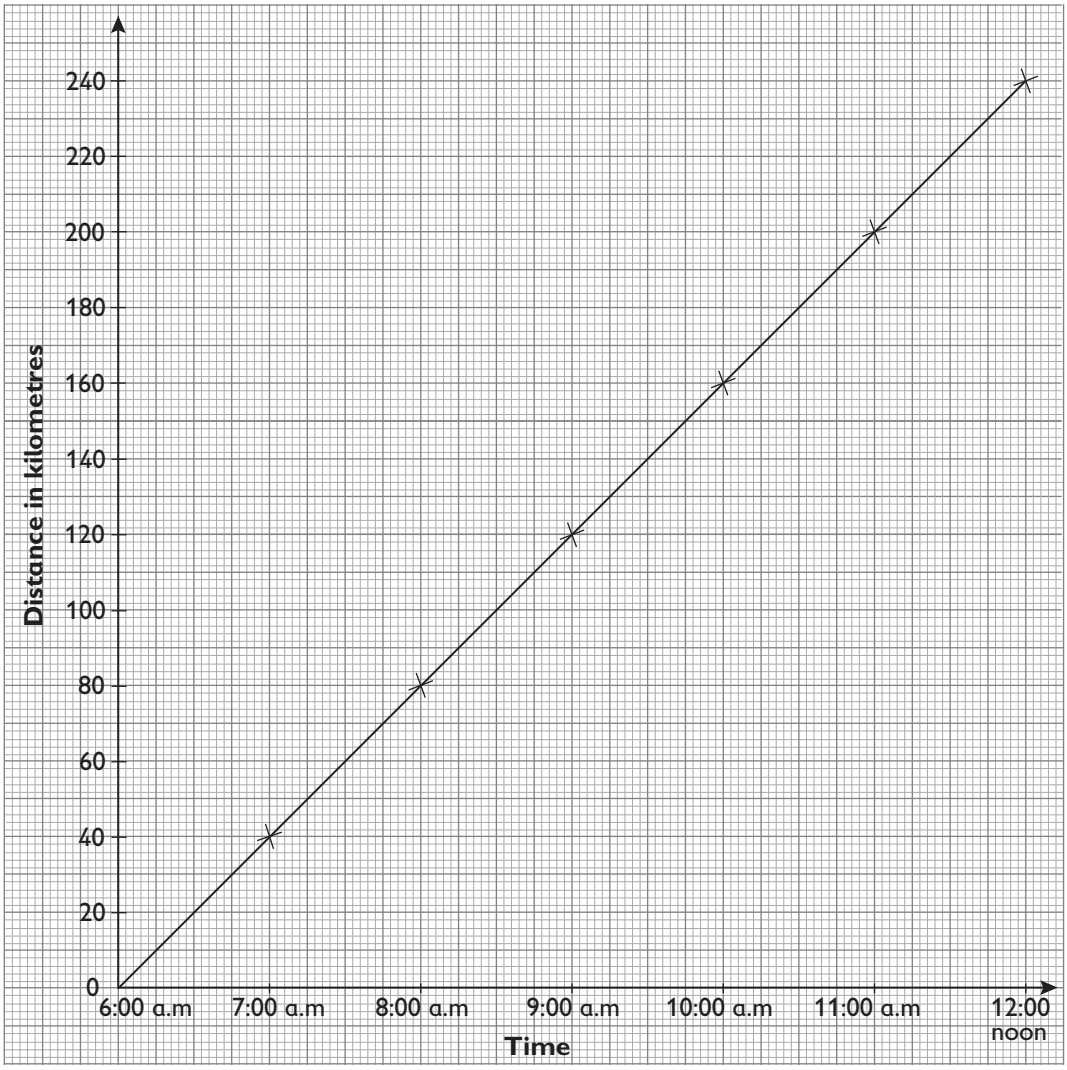
Scale: Horizontal 1 cm represents $\frac{1}{2}$ litre

Vertical 1 cm represents 10 kilometres



4. A line graph representing a driver's journey from Nairobi to Kericho.

Scale: Horizontal 1 cm represents 1 hour
Vertical 1 cm represents 20 kilometres

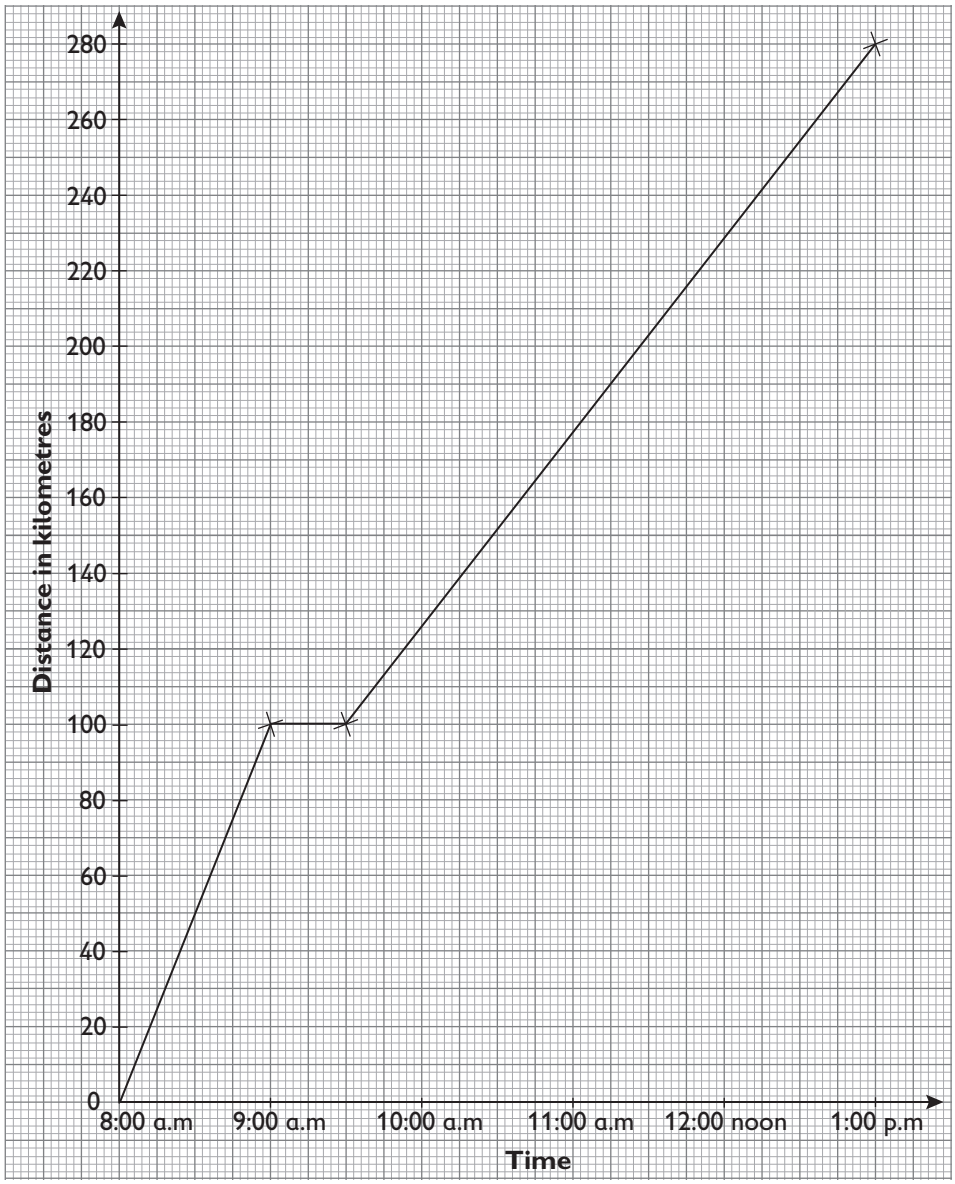


Stretch zone

A line graph representing Munene's journey

Scale: Horizontal 1 cm represents 30 minutes

Vertical 1 cm represents 20 kilometres



Interpreting travel graphs

Apply

1. **(a)** Vertical scale: 1 cm represents 50 km
Horizontal scale 1 cm represents 30 minutes
(b) 350 km **(c)** 150 km **(d)** 30 min

2. **(a)** Vertical scale: 1 cm represents 5 km
Horizontal scale: 1 cm represents 30 minutes

3. **(b)** 11:30 a.m.
(c) **(i)** 10 km **(ii)** 20 km **(d)** $2\frac{1}{2}$ hours

Stretch zone

(a) Vertical axis: 1 cm represents 25 km
Horizontal scale: 1 cm represents 30 minutes

(b) 250 km **(c)** 8.30 a.m **(d)** 75 km

(e $4\frac{3}{10}$ hours or 4 hours 18 minutes. Note, 1 small square represent 6 minutes on the horizontal scale.

Assessments

Assessment 1

1. 4 085 513 **2.** 3 9920 3. 182 **4.** 53

5. 12th March **6.** 320 **7.** 508

8.

Item	sh	ct
3 kg of maize @ sh 90	315	00
2 loaves for sh 120	120	00
4 packets of milk @ sh 55	220	00
$\frac{3}{4}$ kg of onions @s h 80	60	00
Total	715	00

Balance sh 285

9. sh 17 600 **10.** sh 36 000 **11.** sh 55 **12.** 80

13. sh 16 320 **14.** 30 m/s **15.** 269 500 litres

16. 60° **17.** 10.6 cm **18.** BC

19. 7g – 6 **20.** y = 10

Assessment 2

1. 14 000 bags **2.** 12 blocks **3.** 37 kg

4. $\frac{1}{8}$ **5.** sh 94 500 **6.** $\frac{x + y + z}{30}$

7. 40 goats **8.** 12 m **9.** 80 cm

10. 98 mm **11.** 25 m/s **12.** 30°C

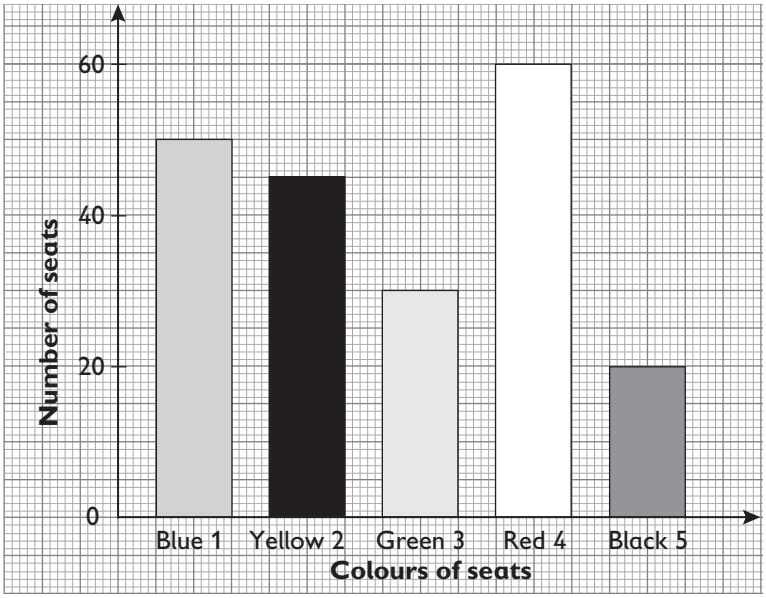
13. 24.64 m^2 **14.** sh 22 500

15.

Item	Number of items	Unit cost (sh)	Total cost (sh)
School bag	1	1 200	1 200
Shoes	1	1 000	1 000
Exercise books	12	50	600
Geometrical set	1	200	200
Pens	5	20	100
		Total	**3 100**

16. 64° **17.** 135°

18.



19. 1.4112 Ha **20.** 13 523 seconds

Assessment 3

1. (a) Two billion, three hundred and twenty five thousand and fifty

(b) Ten thousands

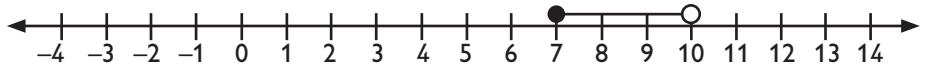
2. $1\frac{1}{2}$ **3.** 294 km **4.** 35.7

5. (a) (t + 4) years **(b)** (2t + 10) years

6. 360 cm^3 **7.** 5

8. **(a)** $7 \leq k < 12$

(b)

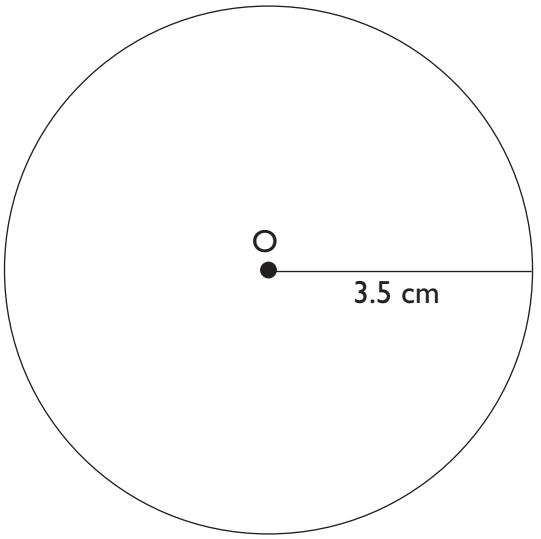


9. 190 **10.** $\frac{5\,000}{t}$ **11.** 45 seconds

12. **(a)** Pentagon **(b)** 540°

13. 250 cm **14.** **(a)** 280 km **(b)** 80 km/h

15. **(a)**



(b) 38.5

16. Ksh 170 **17.** $\frac{1}{3}$

18. **(a)** 32°C **(b)** 305K

19. **(a)** 1 hour 45 minutes **(b)** 52 km/h

20. **(a)** 27.72 **(b)** 27 720 litres

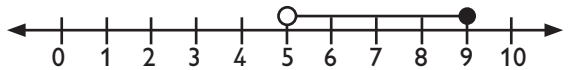
Assessment 4

1. sh 600 000 000 **2.** 299 950 **3.** 1 440 m

4. 3 litres **5.** Ksh 12 500 **6.** Ksh 9 000

7. $2x - y$ **8.** $7x - \frac{1}{2}y$

9. **(a)** $5 < m \leq 9$



(b) $5 < x \leq 10$

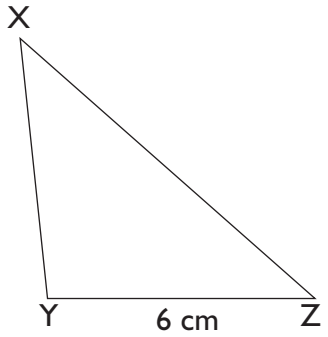
10. 125 m **11.** 24 cm **12.** R = 31.51 m

13. 25 m/s **14.** 363K **15.** 168 cm^2

16. sh 30 000

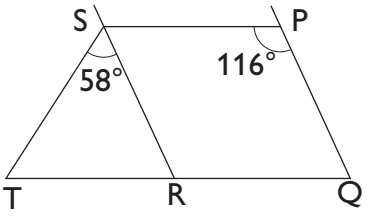
17. Ksh 7 520

18.



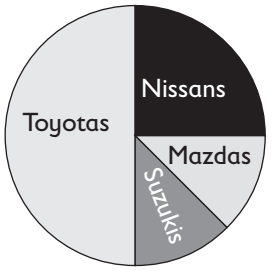
XZ = 10.3 cm

19.



∠QPS = 116°

20. (a)



(b) 45 toyotas

Assessment 5

1. Forty five million, six hundred and seventeen thousand, five hundred and eighty two

2. $95\frac{1}{16}$ m²

3. 20 000 000

4. Ksh 5

5. Ksh 1132.95

6. (4x – 10) years

7. 384 bars

8. 12 < y < 18

9. 15 m

10. 0.1125 m³

11. 5.5 cm

12. 210 000 m

13. 12K

14. 7.5 m

15. Ksh 4 433

16. 12.5 m

17. 7 cm

18. 94.5°

19.

Mass	Tally	Frequency
49		4
50		5
51		6
52		5

20. 3 432 ares