## ANSWERS

## Chapter 5 LENGTH

Exercise 5A Measure and Estimate Length in Metric Units (I)
I.
(a) more
(b) less
2.
(a) 2
(b) 2
(c) The desk is about $\qquad$ meter tall. The desk is about $\quad 2$ meters long.
(d) The width of the door is about
$\qquad$ meter.

The height of the door is about
$\qquad$ meters.
3. (a) less
(b) more
(c) Accept all correct answers. Example: more
4. Paul is about I meter tall.

Paul can lie on the bench with his feet at the edge of the bench.
Ana can then estimate the length of the bench based on Paul's height.

## Exercise 5A Measure and Estimate Length in Metric Units (2)

I.
(b) 5
(c) 10

2
(a) cm
(b) m
(c) cm
(d) m
3. (a) Estimate: about 9

Measure: 10 cm
(b) I agree with Mason.

I use a ruler to measure the length of the Additional Practice book.
It is longer than 20 centimeters. The total length of two tubes of toothpaste is about 20 centimeters. Thus, the length of the book is longer than two tubes of toothpaste.

## Exercise 5A Measure and Estimate Length in Metric Units (3)

I. (a) 6
(b) 9
(c) 12
2. (a)
(b)

(c)

3. (a) Estimate: about 10 cm

Measure: II cm
(b) Estimate: about 3 cm

Measure: 4 cm
(c) Estimate: about 13 cm

Measure: $\quad 15$ cm
4. No, I do not agree with Bruno. A part of the curve is longer than the straight line.


## Exercise 5B Measure and Estimate Length in Customary Units (I)

I.
(a) 6
(b) 4
(c) 3
2. (a)

(b)

3. (a) Estimate: about 3 in.

Measure: 4 in.
(b) Estimate: about 6

Measure: 6
(c) Estimate: about 4 in.

Measure: 3 in in.
4. (a) Estimate: about 3 in.

Measure: 3 in.
(b) Estimate: about 3 in Measure: 2 in.
(c) Estimate: about 5 in Measure: 7 in.

Exercise 5B Measure and Estimate Length in Customary Units (2)
I.
(a) 2
(b) 5
(c) 4
(d) 4
(e) 3
2. Accept all correct answers. Examples:
(a) Estimate: about ___ft

Measure: $\quad \mathrm{I} \mathrm{ft}$
(b) Estimate: about _ 2 ft

Measure: 3 ft
(c) Estimate: about $\quad 2 \mathrm{ft}$

Measure: $\quad 2 \mathrm{ft}$
(d) Estimate: about 4 ft

Measure: 4

## Exercise 5B Measure and Estimate

 Length in Customary Units (3)I.
(a) 2
(b) 3
(c) 3
(d) 2
2.
(a) feet
(b) yards
(c) feet
(d) yards

Exercise 5C Compare and Order Lengths (I)
I.
(a) 5
(b) 3
(c) 4
(d) $\frac{\text { cucumber }}{\text { longest }}, \frac{\text { okra }}{}, \frac{\text { carrot }}{}, \frac{\text { egg plant }}{\text { shortest }}$
 taller than Lighthouse $\quad \mathrm{A}$.
(b) $25 \bigcirc 14=11$
John's straw is II centimeters shorter than Kate's straw.
3. (a) $\frac{64}{\begin{array}{l}\text { Building } Y \text { is } \\ \text { Building } X .\end{array}}=\frac{4}{4}$ meters taller than
(b) $\frac{93}{\begin{array}{l}\text { Building } \mathrm{Y} \text { is } \\ \text { Building } W \text {. }\end{array} \frac{64}{29}=\frac{29}{\text { meters shorter than }}}$
(c) Building $\underset{\text { shortest }}{\mathrm{X}}$, Building Y ,

Building $\frac{W}{\text { tallest }}$
4. (a)


The line is 10 centimeters long.
(b)

The line is 4 centimeters long.
(c) $\frac{10}{\text { longest }} \mathrm{cm}, \frac{6}{} \mathrm{~cm}, \frac{4}{\text { shortest }} \mathrm{cm}$

Exercise 5C Compare and Order Lengths (2)
I. $28-12=16$

Leo's toy train is 16 inches
shorter than Jasper's toy train.
2. $6+3=9$

The lamppost is 9 feet tall.
3. (a) Evan threw a shorter distance.
(b) $47-33=14$ Quinn threw 14 feet farther than Evan
4. (a)

(b)
5. (a)
)
(a) $\frac{35}{\text { Rope } Q \text { is } \xlongequal[73]{73} \text { yards long. }}=\frac{73}{+}$
(b) $35-12=23$

Rope $R$ is 23 yards long.
(c) $73-23=50$

Rope $R$ is 50 yards shorter than Rope Q.
(d)

6. (a) $218+62=280$

Owen's home is 280 yards from the playground.
(b) 218 yards is the least among the three distances.

Kay's home is the closest to the playground.

## Exercise 5D Word Problems (I)

I.

$100-32=68$
Lily is 68 meters from the start line.
2.

$308-215=93$
Ryan walks 93 yards farther than Daniel.
3.

$25+18=43$
The height of the rose plant is 43 centimeters.
4.

$42-15=27$
The badminton racket is 27 inches long.
5.

$45+37=82$
The length of the lawn is 82 feet.
6.

$49+12=61$
The clothes stand is 6I_ inches tall.

$275+85=360$
(b) $275+360=635$

The total length of the tanker and the cruise ship is 635 meters.
2. (a)

$30-18=12$
The bigger mirror is $\qquad$ inches wider than the smaller mirror.
(b) $30+18=48$

The total width of the two mirrors is 48 inches.
3. (a)
(a) ?

(b) ? building

$94-23=71$
The building is 71 feet taller than the flagpole.
(b) $23+94=117$

The total height of the flagpole and the building is $\qquad$ 117 feet.
4.

$72+45=117$
Mr. Lee used II7 yards of cloth to make curtains and dresses in all.
$117+86=203$
Mr. Lee had 203 yards of cloth at the beginning.
5.

$200-98=102$
The pine tree is about 102 feet tall.
$102+232=334$
The redwood tree is about 334 feet tall.
6.

|  | Length of <br> Longer Wire | Length of <br> Shorter Wire | Total Length |
| :--- | :---: | :---: | :---: |
| Guess 1 | 30 | $30-12=18$ | $30+18=48(\boldsymbol{X})$ |
| Guess 2 | 50 | $50-12=38$ | $50+38=88(x)$ |
| Guess 3 | 55 | $55-12=43$ | $55+43=98(x)$ |
| Guess 4 | 52 | $52-12=40$ | $52+40=92(\checkmark)$ |

The length of the longer piece of wire is 52 centimeters.

## Chapter Practice

I. $B$
2. $B$
3. C
4. A
5. D
6. B
7.

The length of the line is $\qquad$ 7 centimeters.
8.

$410-325=85$
85 feet more red tinsel than blue tinsel were used.
१.
(a)?

(a) $125-3 \mid=94$

Joe used 94 inches of ribbon in all.
(b) $94-20=74$

Joe used 74 inches of ribbon to make the flowers.
10. (a) Yes, Bottle $D$ is taller than Bottle $A$ since Bottle $D$ is taller than Bottle $B$, which is taller than Bottle A .


Bottle A is 33 centimeters tall.
$33+14=47$
Bottle B is $\underline{47}$ centimeters tall.
$47-10=37$
Bottle C is 37 centimeters tall.
$47+10=57$
Bottle D is

$$
57 \text { centimeters tall. }
$$

II. (a)


Path Z__ is the longest.
(b) $\mid 16-5 I=65$
$65+85=150$
The longest path is 150 meters longer than the shortest path.

## Chapter 6 MULTIPLICATION <br> Exercise 6A Add Equal Groups

I. (a) $\quad 4$ groups of 2
$2+2+2+2=-\quad 8$
(b) 3 groups of 4
$\underline{4}+\underline{4}+\underline{4}=\underline{12}$
(c) $\begin{aligned} & \frac{5}{3} \text { groups of } \frac{3}{3}+3+3+3+3+3+3+3\end{aligned}$
$=15$
(d) $\qquad$ groups of
$\qquad$ $+\quad 7=$ $\qquad$
(e) $\qquad$ rows of $\qquad$
$\qquad$ $+$ $\qquad$ 6 $+$ $\qquad$ $=$ $\qquad$
(f) $\qquad$ rows of $\qquad$

$$
5
$$

$$
5+5+5+5=20
$$

$$
\text { (g) } \quad 4 \text { rows of } 10
$$

$$
\underline{10}+
$$

$\qquad$
$\qquad$
$\qquad$ $=$ $\qquad$
(h) $\qquad$
$\qquad$ $+$ $\qquad$ $+$ $\qquad$ $+$ $\qquad$ $+\quad 8$

$$
=40
$$

## Exercise 6B Even and Odd Numbers

I. (a)


8 is an even number.
(b)


I5 is an odd number.
(c)


I8 is an even number.
2.

3.

4. (a) even
(b) odd
5. (a) $14=7+\ldots$

14 is an even number.
(b) $12=6+\frac{6}{12 \text { is an }} \begin{aligned} & \text { even } \\ & \text { number. }\end{aligned}$
(c) $19=10+\frac{9}{19 \text { is an odd }}$ number.
6. (a) odd
(b) even
(c) odd
(d) odd
(e) even
(f) even
2. (a) $4 \times 5=5+5+5$

$$
=\underline{20}
$$

(b) $3 \times 9=9+9$

$$
=\underline{27}
$$

(c) $5 \times 6=6+$ $\qquad$ $+6$ $+\quad 6$

$$
\begin{aligned}
& +\frac{6}{30} \\
= &
\end{aligned}
$$

3. $\quad 4 \times 7$
$=\underline{7}+\underline{7}+\underline{7}$
$=28$
There are 28 muffins on 4 plates.
4. $3 \times 8$
$=+++8+8$
$=24$
There are 24 peaches on 3 plates.
5. $4 \times \underline{6}$

$=24$
4 ants have 24 legs in all.
6. $3 \times 10$
$=10+10+10$
$=30$
There are 30 beads in all.
7. Mr. Reynolds bought 4 coats.

Each coat has 3 buttons.
$4 \times 3$
$=3+++3+3$
There are 12 buttons in all.
8. Ms. Lee bought _ 2 packs of paper towel.

Each pack has 8 rolls of paper towel.
$2 \times 8$
$=8+8$
$=+16$
Ms. Lee bought 16 rolls of paper towel in all.
9. A pet shop has 4 bowls.

There are 9 fish in each bowl.
$4 \times 9$
$=\frac{9}{36}+9+9+9$
There are 36 fish in all.
10. There are 3 trays.

Each tray has 6
$3 \times 6$
$=\frac{6}{18}+++\square$
There are 18 glasses of juice altogether.

## Chapter Practice

I. B
2. A
3. B
4. D
5. $\begin{aligned} & 3 \times 7=\frac{7}{21}++7+7 \\ &=\underset{7}{7} \text { are } 21 \\ & \text { There ares ers. }\end{aligned}$
6. (a) $6,8,10,12,14,16$
(b) $20,30,40,50,60,70,80$
(c) $10,15,20,25,30,35$
7. $5 \times 9=$
$\qquad$ $+$ 9 $+9 \rightarrow$

$=45$
There are $\qquad$ 45 tomatoes in all.
8.


Alison has $\qquad$ 40 beads in all.
9. No, I do not agree with Derek.


23 is an odd number as there is I circle left that cannot form a pair.
10. $20-3=17$

Franco has 17 strawberries left.
When we put 17 strawberries in groups of 2 s , there is one strawberry left, which is not paired.

So, 17 is an odd number.
Thus, Franco has an odd number of strawberries left.

II.

| Number of <br> Erasers Each <br> Student <br> Receives | Number of <br> Erasers Given <br> to Students | Number of <br> Erasers <br> Mr. Garcia <br> Has At First |
| :---: | :---: | :---: |
| 1 | $6 \times 1=6$ | $6+2=8(\boldsymbol{X})$ |
| 2 | $6 \times 2=12$ | $12+2=14(\boldsymbol{X})$ |
| 3 | $6 \times 3=18$ | $18+2=20(\boldsymbol{X})$ |
| 4 | $6 \times 4=24$ | $24+2=26(\boldsymbol{\nu})$ |
| 5 | $6 \times 5=30$ | $30+2=32(\boldsymbol{x})$ |

Mr. Garcia has $\qquad$ erasers at first.

## Chapter 7 TIME

Exercise 7A Tell Time (I)
I.
. (a) 7:15
(b) $9: 20$
(c) $2: 35$
2.

eight twenty-five
3. (a)

(b)

(c)

(d)

(e)

(f)

4. (a) It is 15 minutes past 9 .

The time is 9:15.
(b) It is 35 minutes past $\xrightarrow{10}$.

The time is 10:35.
(c) It is 10 minutes to 5 .

The time is $\underline{4: 50}$.
(d) It is 20 minutes to $\quad 1$. The time is $12: 40$.
5. (a) It is 25 minutes past 10 . The time is ten twenty-five.
(b) It is 10 minutes to 4 .

The time is three $\qquad$ fifty
(c) It is 25 minutes to 9 . The time is eight thirty-five
6.
(a) past
(b) to
(c) past

## Exercise 7A Tell Time (2)

I.
(a) a.m.
(b) p.m.
(c) a.m.
(d) p.m.
(e) p.m.
(f) a.m.
2.
(a) a.m.
(b) p.m.
(c) a.m.
(d) p.m.
(e) p.m.
(f) a.m.
3. (a) 9:25 a.m.
(b) 7:40 p.m.
(c) $1: 10$ p.m.
4.
(a) 6:45 a.m.
(b) 8:IO a.m.
(c) $12: 35 \mathrm{p} . \mathrm{m}$.
(d) 6:30 p.m.
(e) Scott leaves school at 4:50 p.m. He takes I hour to reach home. So, he reaches home at 5:50 p.m.

## Exercise 7B Hours and Minutes

I. (a) 9:00
(b) $4: 15$
2. (a) $10: 35$
(b) 6:05
3.
(a) 1:55 p.m.
(b) 9:45 a.m.
(c) $5: 50$ p.m.
4.


Mr Collins takes 45 minutes to read the newspaper.

## Chapter Practice

I. $D$
2. $C$
3. D
4. (a)

(b)

5. (a) a.m.
(b) p.m.
(c) p.m.
(d) p.m.
(e) p.m.
(f) a.m.
(g) p.m.
(h) a.m.
6. (a) Mike reaches the library at 10:25 a.m. He leaves the library at 10:50 a.m. Mike's visit to the library lasts 25 minutes.
(b) Mr. Watson starts having his haircut at 5:IO p.m.

He finishes his haircut at 5:40 p.m.
Mr. Watson's haircut lasts 30 minutes.
7. (a) $8: 35$
(b) $1: 50$
8. (a) true
(b) false
(c) false
(d) true
(e) false
9.

10. No, Stacy does not show the time correctly on the clock.
She shows I0:05 instead of I:50.
She mixes up the hour hand and the minute hand.
The hour hand, which is shorter, should be pointing closer to 2 .
The minute hand, which is longer, should point at IO.

## Chapter 8 DATA

Exercise 8A Picture Graphs
I.
. (a) 4
(b) 6
(c) Apple
(d) Orange
(e) 3
(f) 3
2.
(a) 5
(b) Football
(c) Ice hockey
(d) 3
(e) 3
(f) 8
(g) 16
3. (a) 7
(b) 7
(c) 4
(d) 2
(e) Lina
(f) 20
4. (a) 5
(b) 7
(c) 1
(d) 2
(e) penguin, bear
(f) 23
5.

Flowers That Tracy Buys

6. (a)

(b) green
(c) 1
(d) 5
(e) 18
7. (a)

Muffins Mr. Perez Baked

(b) 7
(c) 6
(d) II
8. (a)

Places of Interest

(b) Yellowstone National Park

Exercise 8B Bar Graphs
I.
(a)
(b) 5
(c) 2
(d) 3
(e) 17
2. (a) 4
(b) 12
(c) 3
(d) 3
3. (a) 9
(b) 4
(c) 24
(d) Rosie has 4 more toy cars than Chris. Thus, she has to give Chris two toy cars so that each will have an equal number of toy cars.


4. (a)

(b) 19
5. (a)

Items for Recycling

(b) 4
(c) 27
6. (a)

Animals on a Farm

(b) II
(c) 3
(d) 2
(e) 17

Exercise 8C Line Plots (I)
I. (a) 3
(b) 4
(c) 2
(d) 2
(e) 7
(f) 18
2. (a) 4
(b) 5
(c) 2
(d) 2
(e) 25
(f) 14
3.
(a) 3
(b) 2
(c) II
(d) 10
(e) 21
(f) Wilson has three 4-feet plants. He has as many 4 -feet plants as 5 -feet plants. Wilson buys three 5-feet plants.
4. (a) 3
(b) 5
(c) There are 8 children whose handspans are 4 inches long.
Double $8=8+8=16$
At first, there are 9 children whose handspans are 5 inches long.
Thus, the number of children who join the group is $16-9=7$.
7 children join the group.

## Exercise 8C Line Plots (2)

I. (a)

Length of Straws


Key: Each $\boldsymbol{X}$ stands for one straw.
(b) 8
(c) 7
(d) 34
2. (a)

Height of Plants


Key: Each $\boldsymbol{X}$ stands for I plant.
(b) 7
(c) II
(d) II

## Chapter Practice

I. C
2. B
3. D
4. C
5. D
6. (a)

Balls in the Room

| Type of Ball | Number of Balls |
| :---: | :---: |
| Basketball | Soccer ball |
| Sennis ball | Sole |
| Volleyball | Key: Each |
| Ktands for I ball. |  |

(b)

Balls in the Room

(c) $4-2=2$

There are 2 more volleyballs than soccer balls.
(d) $5+2+7+4=18$ There are 18 balls in all.
7. (a)
(b) 6


Key: Each $\boldsymbol{X}$ stands for I ribbon.
(c) 5
(d) 9

6
(c)
d
(d)
8. (a) Number of dimes Joni has $=6$

Number of dimes Kim has = 3
Total number of dimes Joni and Kim have
$=6+3$
$=9$
$9-4=5$
Carl has 5 dimes.
(b) Number of dimes Juan has = 6-2

$$
=4
$$

$6+3+5+4=18$
The four friends have 18 dimes in all.

## Chapter 9 SHAPES

Exercise 9A 2-D and 3-D Shapes (I)
I. (a)

| Shape | Number of <br> Sides | Number of <br> Vertices | Number of <br> Angles |
| :---: | :---: | :---: | :---: |
| A | 4 | 4 | 4 |
| B | 3 | 3 | 3 |
| C | 4 | 4 | 4 |
| D | 4 | 4 | 4 |
| E | 6 | 6 | 6 |
| F | 5 | 5 | 5 |

(b) Shape B is a triangle.
(c) Shapes A C , and D are quadrilaterals.
2. (a)

| Triangle | Quadrilateral | Pentagon | Hexagon |
| :---: | :---: | :---: | :---: |
| D, G | A, B, F, L | C, H, K, N | E, I, J, M |

(b) I know which shapes are hexagons from the number of sides, angles, and vertices the shapes have.
A hexagon has 6 sides, 6 angles, and 6 vertices.
3. (a) This shape has 5 sides.

It has 5 vertices.
It has 5 angles.
This shape is a pentagon.
(b) This shape has 4 sides.
It has $\frac{4}{4}$ vertices.
It has $\quad$ angles.

This shape is a trapezoid/quadrilateral.
4. No, I do not agree with James.

A hexagon has 6 sides and 6 vertices.
5. Accept all correct shapes. Example:
(a)
(b)

6. Accept all correct shapes. Example:
(a)
(b)

7. Accept all correct shapes. Example:
(a)
(b)

8. Accept all correct shapes. Example:
(a)
(b)

9. (a)


I have drawn a square.
(b)


I have drawn a trapezoid.

Exercise 9A 2-D and 3-D Shapes (2)
I. (a) Solid $D$ is a rectangular prism.

It has 6 flat faces, 12 edges, and 8 vertices.
(b) Solid B_ is a cube.

It has 6 flat faces, 12 edges, and 8 vertices.
(c) Solid $\frac{\text { A }}{2}$ is a cylinder.

It has $\qquad$ flat faces.
2.

3. This 3-D shape is a rectangular prism.

There are 2 square faces and 4 rectangular faces of the same size.
These faces will form a rectangular prism.
4. I do not agree with Clara.

This 3-D shape has 6 rectangular faces. It is not a cube as a cube has 6 square faces of the same size.

## Exercise 9B Partition 2-D Shapes (I)

I. (a) The rectangle has 2 rows and 4 columns of squares.

There are 8 squares in all.
(b) The big square has 3 rows and 3 columns of squares. There are $\quad 9$ squares in all.
(c) The rectangle has $\qquad$ 4 rows and
$\qquad$ 5 columns of squares. There are 20 squares in all.
2. Rectangle $P$ has I_ row and
$\qquad$ columns of squares.

Rectangle $Q$ has $\qquad$ rows and
3 columns of squares.
3.

| Rectangle | Number of <br> Rows | Number of <br> Columns | Number of <br> Squares |
| :---: | :---: | :---: | :---: |
| M | 2 | 5 | 10 |
| N | 1 | 10 | 10 |

4. Accept all correct shapes. Example:


| Number of <br> Rows | Number of <br> Columns | Number of <br> Squares |
| :---: | :---: | :---: |
| 9 | 2 | 18 |
| 6 | 3 | 18 |
| 3 | 6 | 18 |

5 (a)

(b)


The rectangle is made up of squares.
(c)


The rectangle is made up of $\quad 3$ rows and $\qquad$ columns of same-sized squares.

There are 24 squares in all.

## Exercise 9B Partition 2-D Shapes (2)

I. (a) The rectangle is cut into 2 equal parts.
Each part is a half of the rectangle.
2 halves make one whole.
(b) The circle shows 3 equal parts.

Each part is a third of the circle.
3 thirds make one whole.
(c) The square shows 4 equal parts. Each part is a fourth of the square. 4 fourths make one whole.
2. Color any one part of each shape. Example:
(a)

(b)

3. (a)

(b)

(c)

(d)

(e)

(f)

4. Accept all correct answers. Example:
(a)

(b)

5. Accept all correct answers. Example:
(a)


6. Accept all correct answers. Examples:

7. Accept all correct answers. Example:
(a)

(b)

8. Yes, a fourth of the rectangle is shaded since the rectangle is partitioned into 4 equal parts.

The shape is first partitioned into 2 equal parts. Then each half is partitioned into 2 equal parts to get fourths.


## Chapter Practice

I. B
2. A
3. D
4. B
5. C
6. C
7. Accept all correct shapes. Examples:

8.


The rectangle is made up of 24 squares.
9.

10. Accept all correct answers. Example:
(a)

(b)

II. I agree with Jemima. The shaded part is one fourth of the rectangle.

The shape is first partitioned into halves. Then one half is partitioned into 2 equal parts. Thus, the shaded part is a fourth of the rectangle.

12. (a)

| 3-D <br> Shape | Number of <br> Edges | Number of <br> Vertices | Number of <br> Faces |
| :--- | :---: | :---: | :---: |
| Rectangular <br> prism | 12 | 8 | 6 |
| Cube | 12 | 8 | 6 |

(b) No, I do not agree with Kate.

For a rectangular prism, all its six faces need not be squares. Example:


For a cube, all its six faces must be squares.


Thus, a rectangular prism may not be a cube.

