Online
onlineresources.sapgrp.com

Learning MATHS 5B

Reviewed and recommended by Teachers and Parents

SAMPLE

Author
Norrin Hasim
BA, PGDE

Executive Editor
Chelsea Cheh

NAME : _____

CLASS : _____



Learning Maths Book 5B

New Edition 2018

© Singapore Asia Publishers Pte Ltd

Published and Distributed by:

Singapore Asia Publishers Pte Ltd
219 Henderson Road #10-04
Henderson Industrial Park
Singapore 159556
Tel : +65 6276 8280
Fax : +65 6276 8292
Email: info.sg@sapgrp.com
Website: www.sapgrp.com
Facebook: Singapore-Asia-Publishers

ALL RIGHTS RESERVED
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

ISBN-13 978-981-274-241-4
ISBN-10 981-274-241-7

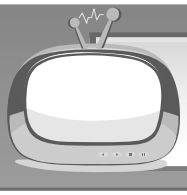
Printed under licence in Australia by Five Senses Education Pty Ltd

SAP Global Partners' Network:

Antigua & Barbuda	Ghana	Namibia	Saint Lucia
Australia	Grenada	Nepal	Saint Vincent & the Grenadines
Bahrain	Guyana	New Zealand	South Africa
Bangladesh	Hong Kong	Nigeria	South Korea
Barbados	India	Pakistan	Syria
Bhutan	Indonesia	Papua New Guinea	Taiwan
Bostwana	Jamaica	Philippines	Tanzania
Brazil	Japan	Poland	Thailand
Brunei	Laos	Portugal	Trinidad & Tobago
Cambodia	Lebanon	Qatar	United Arab Emirates
Canada	Macau	Rwanda	United Kingdom
Chile	Malaysia	Saudi Arabia	United States of America
China	Malawi	Seychelles	Vietnam
Colombia	Maldives	Singapore	Zambia
Egypt	Mauritius	Solomon Islands	Zimbabwe
Fiji Island	Myanmar	Sri Lanka	

For international business enquiries, email **ibg@sapgrp.com**

SAMPLE



PREFACE

Learning Maths Book 5B is a comprehensive workbook that provides students with ample practice on various mathematics question types. How is the book helpful to students?

Summary of Learning Outcomes
Refer to the overview of the topics in the book which sets the pace for learning each topic.

Formulae Sheet
Check and recall the essential and critical mathematical formulae and information for each topic.

Free Online Activities
Go online to try the fun activities. Refer to the Contents page to access them.

Topical Exercises
Work on these questions as you learn and become familiar with various question types.

Use of Calculators
Learn to use the calculator to work out your answers through specially designed question types.

Revision Papers
Test yourself. This is the best way to assess your understanding of the topics taught and learnt.

Non-routine Questions
Understand the heuristics better. Try these non-routine questions to develop your thinking and analytical skills.

Step-by-step Solutions
Learn from the carefully worked out solutions included at the back of the book.

Through this comprehensive workbook, students can gain a thorough understanding of the mathematical concepts, hone their problem-solving skills and develop creative and critical thinking skills. This book will inspire confidence as the student progresses.

Norrin Hasim
BA, PGDE

SAMPLE

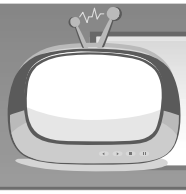
CONTENTS

❶ Log on to onlineresources.sapgrp.com
❷ Click on the title of the book.
❸ Key in the 13-digit ISBN of this book (found on back cover).



Summary of Learning Outcomes ---------- (i)
Formulae Sheet ---------- (ii)
Unit 7 More on Decimals ---------- 1
Unit 8 Conversion of Measurements ---------- 7
REVISION 1 ---------- 12
Unit 9 Average ---------- 16
Unit 10 Percentage ---------- 23
REVISION 2 ---------- 30
Unit 11 Angles ---------- 34
Unit 12 Knowing Triangles and 4-Sided Figures ---------- 40
REVISION 3 ---------- 49
Unit 13 Geometrical Construction ---------- 56
Unit 14 Knowing Volume ---------- 59
REVISION 4 ---------- 69
FINAL REVISION ---------- 73
NON-ROUTINE QUESTIONS
Heuristics: Guess and Check ---------- 83
Word Problems ---------- 84
SOLUTIONS ---------- 87

SAMPLE



LEARNING OUTCOMES

Unit 7 More on Decimals

Students should be able to

- convert decimals to fractions
- multiply and divide decimals by tens, hundreds and thousands without the use of calculators
- perform four operations of decimals using calculators
- solve word problems related to decimals

Unit 8 Conversion of Measurements

Students should be able to

- convert metres to centimetres, kilometres to metres, kilograms to grams and litres to millilitres
- convert centimetres to metres, metres to kilometres, grams to kilograms and millilitres to litres
- solve related word problems

Revision 1

This revision paper tests a student's understanding of Units 7 & 8.

Unit 9 Average

Students should be able to

- understand the concept of average
- calculate average
- calculate total number based on average and number of items given
- solve word problems related to average

Unit 10 Percentage

Students should be able to

- convert percentage to decimals or fractions
- convert decimals or fractions to percentage
- convert part of a quantity into percentage
- calculate quantity based on percentage
- solve word problems related to percentage

Revision 2

This revision paper tests a student's understanding of Units 9 & 10.

Unit 11 Angles

Students should be able to

- recognise and understand angles on a straight line, angles at a point and vertically opposite angles
- use the above mentioned properties to find unknown angles

Unit 12 Knowing Triangles and 4-Sided Figures

Students should be able to

- recognise and find unknown angles in different triangles: right-angled, isosceles and equilateral triangles
- recognise and find unknown angles in a parallelogram, rhombus and trapezium

Revision 3

This revision paper tests a student's understanding of Units 11 & 12.

Unit 13 Geometrical Construction

Students should be able to

- construct triangles, squares, rectangles, parallelograms, rhombuses and trapeziums

Unit 14 Knowing Volume

Students should be able to

- calculate the unit cubes in a solid
- draw a cube or cuboid on dot papers
- find volume of a solid using formula
- convert volume between cm^3, l and ml
- find volume of liquid in a container
- solve word problems related to volume

Revision 4

This revision paper tests a student's understanding of Units 13 & 14.

Final Revision

This revision paper serves as a mock examination paper and is an excellent assessment of a student's understanding of all the topics in this book.

SAMPLE

FORMULAE SHEET

Unit 7 More on Decimals

To multiply decimals by
10, move decimal point 1 place to the right
100, move decimal point 2 places to the right
1000, move decimal point 3 places to the right

To divide decimals by
10, move decimal point 1 place to the left
100, move decimal point 2 places to the left
1000, move decimal point 3 places to the left

Unit 8 Conversion of Measurements

metres to centimetres = × 100
kilometres to metres = × 1000
kilograms to grams = × 1000

centimetres to metres = ÷ 100
metres to kilometres = ÷ 1000
grams to kilograms = ÷ 1000
millilitres to litres = ÷ 1000

Unit 9 Average

average = total number ÷ number of items
total number = average × number of items

Unit 10 Percentage

fraction to percentage = fraction × 100
decimal to percentage = decimal × 100

$$\text{percentage to fraction} = \frac{\text{number in percentage}}{100}$$

(Remember to express in the simplest form.)

percentage to decimal = percentage ÷ 100
To find the percentage of a quantity, multiply percentage by total quantity.

To find GST, multiply 7% by price of the item
To find total cost with GST, add GST to price of the item.

To find discount, multiply discount percentage by usual price of the item.
To find the final price, subtract discount from usual price of the item.

To find interest, multiply interest rate by principal amount.
To find the final amount, add interest to principal amount.

Unit 11 Angles

Properties of angles

- Sum of angles on a straight line is 180°.
- Sum of angles at a point is 360°.
- Vertically opposite angles are equal.

Unit 12 Knowing Triangles and 4-Sided Figures

Property of a triangle

- The sum of all angles in the triangle is 180°.

Properties of a right-angled triangle

- One angle is 90°.
- The sum of the other two angles is 90°.

Properties of an isosceles triangle

- It has two equal sides.
- It has two equal angles.

Properties of an equilateral triangle

- It has three equal sides.
- It has three equal angles.

Properties of a parallelogram

- Opposite sides are equal and parallel.
- Opposite angles are equal.
- The pair of angles between two parallel sides adds up to 180°.

Properties of a rhombus

- It has 4 equal sides.
- Opposite sides are parallel.
- Opposite angles are equal.
- The pair of angles between two parallel sides adds up to 180°.

Properties of a trapezium

- It has one pair of opposite parallel sides.
- The pair of angles between the parallel sides adds up to 180°.

Unit 14 Knowing Volume

1 l = 1000 ml = 1000 cm^3
Volume of cube = Edge × Edge × Edge
Volume of cuboid = Length × Breadth × Height

SAMPLE



7 MORE ON DECIMALS

Examples

1. $3.56 \times 10 = \mathbf{35.6}$
2. $1.05 \times 500 = 1.05 \times 5 \times 100$
   $= 5.25 \times 100$
   $= \mathbf{525}$
3. $0.49 \times 8000 = 0.49 \times 8 \times 1000$
   $= \mathbf{3920}$
4. $45 \div 50 = 45 \div 5 \div 10$
   $= 9 \div 10$
   $= \mathbf{0.9}$
5. $61.5 \div 300 = 61.5 \div 3 \div 100$
   $= 20.5 \div 100$
   $= \mathbf{0.205}$
6. $2831 \div 1000 = \mathbf{2.831}$

Convert these decimals to fractions or mixed numbers. Express each in its simplest form.

1. 0.5 = _____
2. 6.9 = _____
3. 46.6 = _____
4. 258.3 = _____
5. 0.02 = _____
6. 7.36 = _____
7. 69.15 = _____
8. 420.07 = _____
9. 0.003 = _____
10. 8.802 = _____
11. 59.575 = _____
12. 952.007 = _____

SAMPLE

Multiply these decimals. Write the correct answers on the lines provided.

13. $0.5 \times 10 =$ _____

14. $44.9 \times 10 =$ _____

15. $105.67 \times 10 =$ _____

16. $26.093 \times 10 =$ _____

17. $0.08 \times 100 =$ _____

18. $37.71 \times 100 =$ _____

19. $480.409 \times 100 =$ _____

20. $0.28 \times 1000 =$ _____

21. $184.6 \times 1000 =$ _____

22. $475.36 \times 1000 =$ _____

23. $0.32 \times$ _____ $= 3.2$

24. $0.7 \times$ _____ $= 70$

25. $90.01 \times$ _____ $= 9001$

26. _____ $\times 10 = 1.48$

27. _____ $\times 100 = 6.5$

28. _____ $\times 1000 = 500$

29. $0.2 \times 40 = 0.2 \times$ _____ $\times$ _____ $=$ _____

30. $68.35 \times 90 = 68.35 \times$ _____ $\times$ _____ $=$ _____

31. $9.4 \times 300 = 9.4 \times$ _____ $\times$ _____ $=$ _____

32. $204.56 \times 700 = 204.56 \times$ _____ $\times$ _____ $=$ _____

33. $50.9 \times 6000 = 50.9 \times$ _____ $\times$ _____ $=$ _____

34. $74.21 \times 3000 = 74.21 \times$ _____ $\times$ _____ $=$ _____

35. $1215 =$ _____ $\times 10 =$ _____ $\times 100 =$ _____ $\times 1000$

36. $4849 = 484.9 \times$ _____ $= 48.49 \times$ _____ $= 4.849 \times$ _____

37. $12\,008 =$ _____ $\times 10 =$ _____ $\times 100 =$ _____ $\times 1000$

SAMPLE

Divide these decimals. Write the correct answers on the lines provided.

38. $7 \div 10 =$ _____

39. $0.9 \div 10 =$ _____

40. $95.73 \div 10 =$ _____

41. $78.7 \div 100 =$ _____

42. $5461 \div 100 =$ _____

43. $1003 \div 1000 =$ _____

44. $20\,120 \div 1000 =$ _____

45. $71.62 \div$ _____ $= 7.162$

46. $187.9 \div$ _____ $= 1.879$

47. $807 \div$ _____ $= 0.807$

48. _____ $\div 10 = 0.218$

49. _____ $\div 100 = 3.649$

50. _____ $\div 1000 = 0.092$

51. _____ $\div 1000 = 13.55$

52. $2.4 \div 20 = 2.4 \div$ _____ $\div$ _____ $=$ _____

53. $4.05 \div 50 = 4.05 \div$ _____ $\div$ _____ $=$ _____

54. $84 \div 700 = 84 \div$ _____ $\div$ _____ $=$ _____

55. $178 \div 400 = 178 \div$ _____ $\div$ _____ $=$ _____

56. $90 \div 3000 = 90 \div$ _____ $\div$ _____ $=$ _____

57. $954 \div 6000 = 954 \div$ _____ $\div$ _____ $=$ _____

58. $6.27 =$ _____ $\div 10 =$ _____ $\div 100 =$ _____ $\div 1000$

59. $179.4 =$ _____ $\div 10 =$ _____ $\div 100 =$ _____ $\div 1000$

60. $24.8 = 24\,800 \div$ _____ $= 2480 \div$ _____ $= 248 \div$ _____

SAMPLE

Do these sums with the use of a calculator.

61. $23.55 + $17.95 = _____

62. 100.3 cm – 62.08 cm = _____

63. 45.7 m × 90 = _____

64. 53.915 kg ÷ 5 = _____

65. $25.35 × 19 = _____

66. Add 107.83 *l* and 64.18 *l* = _____

67. Subtract $937.95 from $3549.20 = _____

68. Multiply 2.864 g by 47 = _____

69. Divide 736.4 kg by 35 = _____

70. Subtract 20.346 *l* from 548.6 *l* = _____

SAMPLE

Do these word problems. Show your working clearly in the space provided.

71. A dozen similar T-shirts cost $162.60. How much does each T-shirt cost?



72. Mrs Matthew bought 12.45 kg of prawns and $\frac{3}{4}$ kg of squids. If the prawns cost $30 per kg and the squids cost $18 per kg, how much did Mrs Matthew spend altogether?

73. The mass of a metal container, together with 10 identical metal balls, is 79.15 kg. If the mass of the metal container is 16.75 kg, what is the mass of each metal ball?

SAMPLE

74. Joey bought 17.3 m of cloth. $\frac{1}{5}$ of the cloth was damaged and she used the rest to make 4 similar curtains.

(a) How much cloth did Joey use to make one such curtain?

(b) If Joey sold each curtain for $19.90, how much money would she receive in all?

75. Susan divided 8.6 kg of sugar into 5 equal portions. She kept 2 such portions for herself and gave the rest to her sister. Her sister used 1.15 kg of sugar to bake some cakes. How much sugar had her sister left?

76. A box of pencils costs $3.25 and a box of colour pencils costs $4.65. However, a box of pencils and a box of colour pencils are sold together at $6.50. If Alex wants to buy 6 such boxes of pencils and 9 such boxes of colour pencils, what is the least amount of money that Alex must pay?

SAMPLE



8 CONVERSION OF MEASUREMENTS

Examples

1. Convert 200.9 kg to grams (g).
   200.9 × 1000 = **200 900 g**

2. Convert 462.5 cm to metres (m).
   462.5 ÷ 100 = **4.625 m**

Find the equivalent measures. Write the correct answers on the lines provided.

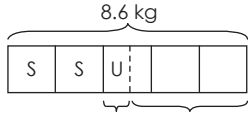
1. Convert 7.05 m to centimetres (cm). _____
2. Convert 9.163 m to centimetres (cm). _____
3. Convert 100.2 m to centimetres (cm). _____
4. Convert 1.755 km to metres (m). _____
5. Convert 24.82 km to metres (m). _____
6. Convert 69.95 km to metres (m). _____
7. Convert 5.105 kg to grams (g). _____
8. Convert 30.4 kg to grams (g). _____
9. Convert 171.7 kg to grams (g). _____
10. Convert 0.126 *l* to millilitres (ml). _____

SAMPLE

SOLUTIONS
Learning Maths 5B

Unit 7: More On Decimals

1. $0.5 = \frac{5}{10} = \mathbf{\frac{1}{2}}$
2. $6.9 = \mathbf{6\frac{9}{10}}$
3. $46.6 = 46\frac{6}{10} = \mathbf{46\frac{3}{5}}$
4. $258.3 = \mathbf{258\frac{3}{10}}$
5. $0.02 = \frac{2}{100} = \mathbf{\frac{1}{50}}$
6. $7.36 = 7\frac{36}{100} = 7\frac{18}{50} = \mathbf{7\frac{9}{25}}$
7. $69.15 = 69\frac{15}{100} = \mathbf{69\frac{3}{20}}$
8. $420.07 = \mathbf{420\frac{7}{100}}$
9. $0.003 = \mathbf{\frac{3}{1000}}$
10. $8.802 = 8\frac{802}{1000} = \mathbf{8\frac{401}{500}}$
11. $59.575 = 59\frac{575}{1000} = \mathbf{59\frac{23}{40}}$
12. $952.007 = \mathbf{952\frac{7}{1000}}$
13. $0.5 \times 10 = \mathbf{5}$
14. $44.9 \times 10 = \mathbf{449}$
15. $105.67 \times 10 = \mathbf{1056.7}$
16. $26.093 \times 10 = \mathbf{260.93}$
17. $0.08 \times 100 = \mathbf{8}$
18. $37.71 \times 100 = \mathbf{3771}$
19. $480.409 \times 100 = \mathbf{48\,040.9}$
20. $0.28 \times 1000 = \mathbf{280}$
21. $184.6 \times 1000 = \mathbf{184\,600}$
22. $475.36 \times 1000 = \mathbf{475\,360}$
23. $3.2 = 0.32 \times \mathbf{10}$
24. $70 = 0.7 \times \mathbf{100}$
25. $9001 = 90.01 \times \mathbf{100}$
26. $\mathbf{0.148} \times 10 = 1.48$
27. $\mathbf{0.065} \times 100 = 6.5$
28. $\mathbf{0.5} \times 1000 = 500$
29. $0.2 \times \mathbf{4} \times \mathbf{10} = \mathbf{8}$
30. $68.35 \times \mathbf{9} \times \mathbf{10} = \mathbf{6151.5}$
31. $9.4 \times \mathbf{3} \times \mathbf{100} = \mathbf{2820}$
32. $204.56 \times \mathbf{7} \times \mathbf{100} = \mathbf{143\,192}$
33. $50.9 \times \mathbf{6} \times \mathbf{1000} = \mathbf{305\,400}$
34. $74.21 \times \mathbf{3} \times \mathbf{1000} = \mathbf{222\,630}$
35. $\mathbf{121.5} \times 10 = \mathbf{12.15} \times 100 = \mathbf{1.215} \times 1000$
36. $484.9 \times \mathbf{10} = 48.49 \times \mathbf{100} = 4.849 \times \mathbf{1000}$
37. $\mathbf{1200.8} \times 10 = \mathbf{120.08} \times 100 = \mathbf{12.008} \times 1000$
38. $7 \div 10 = \mathbf{0.7}$
39. $0.9 \div 10 = \mathbf{0.09}$
40. $95.73 \div 10 = \mathbf{9.573}$
41. $78.7 \div 100 = \mathbf{0.787}$
42. $5461 \div 100 = \mathbf{54.61}$
43. $1003 \div 1000 = \mathbf{1.003}$
44. $20\,120 \div 1000 = \mathbf{20.12}$
45. $7.162 = 71.62 \div \mathbf{10}$
46. $1.879 = 187.9 \div \mathbf{100}$
47. $0.807 = 807 \div \mathbf{1000}$
48. $0.218 = \mathbf{2.18} \div 10$
49. $3.649 = \mathbf{364.9} \div 100$
50. $0.092 = \mathbf{92} \div 1000$
51. $13.55 = \mathbf{13\,550} \div 1000$
52. $2.4 \div \mathbf{2} \div \mathbf{10} = \mathbf{0.12}$
53. $4.05 \div \mathbf{5} \div \mathbf{10} = \mathbf{0.081}$
54. $84 \div \mathbf{7} \div \mathbf{100} = \mathbf{0.12}$
55. $178 \div \mathbf{4} \div \mathbf{100} = \mathbf{0.445}$
56. $90 \div \mathbf{3} \div \mathbf{1000} = \mathbf{0.03}$
57. $954 \div \mathbf{6} \div \mathbf{1000} = \mathbf{0.159}$
58. $6.27 = \mathbf{62.7} \div 10 = \mathbf{627} \div 100 = \mathbf{6270} \div 1000$
59. $179.4 = \mathbf{1794} \div 10 = \mathbf{17\,940} \div 100 = \mathbf{179\,400} \div 1000$
60. $24.8 = 24\,800 \div \mathbf{1000} = 2480 \div \mathbf{100} = 248 \div \mathbf{10}$
61. Press [C] [2] [3] [.] [5] [5] [+] [1] [7] [.] [9] [5] [=]
    $41.50
62. Press [C] [1] [0] [0] [.] [3] [−] [6] [2] [.] [0] [8] [=]
    38.22 cm
63. Press [C] [4] [5] [.] [7] [×] [9] [0] [=]
    4113 m
64. Press [C] [5] [3] [.] [9] [1] [5] [÷] [5] [=]
    10.783 kg
65. Press [C] [2] [5] [.] [3] [5] [×] [1] [9] [=]
    $481.65
66. Press [C] [1] [0] [7] [.] [8] [3] [+] [6] [4] [.] [1] [8] [=]
    172.01 /
67. Press [C] [3] [5] [4] [9] [.] [2] [0] [−] [9] [3] [7] [.] [9] [5] [=]
    $2611.25
68. Press [C] [2] [.] [8] [6] [4] [×] [4] [7] [=]
    134.608 g
69. Press [C] [7] [3] [6] [.] [4] [÷] [3] [5] [=]
    21.04 kg
70. Press [C] [5] [4] [8] [.] [6] [−] [2] [0] [.] [3] [4] [6] [=]
    528.254 /
71. $162.60 \div 12 = \$13.55$
    Each T-shirt costs **$13.55**.
72. $\frac{3}{4} \times 1000 = 750\text{ g} = 0.75\text{ kg}$
    $(12.45 \times \$30) + (0.75 \times \$18)$
    $= \$387$
    Mrs Matthew spent **$387** altogether.
73. $79.15 - 16.75 = 62.4\text{ kg}$
    $62.4 \div 10 = 6.24\text{ kg}$
    The mass of each metal ball is **6.24 kg**.
74. (a) $1 - \frac{1}{5} = \frac{4}{5}$
    $\frac{4}{5} \times 17.3 = 13.84\text{ m}$
    $13.84 \div 4 = 3.46\text{ m}$
    Joey used **3.46 m** of cloth to make one such curtain.
    (b) $4 \times \$19.90 = \$79.60$
    She would receive **$79.60** in all.
75. 8.6 kg



    5 units → 8.6 kg
    1 unit → 8.6 ÷ 5 = 1.72 kg
    3 units → 3 × 1.72 = 5.16 kg
    5.16 − 1.15 = 4.01 kg
    Her sister had **4.01 kg** of sugar left.
76. $6 \times \$6.50 = \$39$
    $3 \times \$4.65 = \$13.95$
    $\$39 + \$13.95 = \$52.95$
    The least amount of money that Alex must pay is **$52.95**.

SAMPLE

© SAP Group Pte Ltd • ALL RIGHTS RESERVED •