

Year 7 Term 2 Homework

Student Name: _____	Grade: _____
Date: _____	Score: _____

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8 Year 7 Term 2 Week 8 Homework

8.1 Number Patterns and Pronumerals

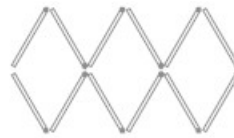
Exercise 8.1.1 Describe in words a rule for each sequence, then find the next two numbers.

1. 5, 11, 17, 23, _____, _____

2. 70, 62, 54, 46, _____, _____

3. 2, 7, 22, 67, _____, _____

Exercise 8.1.2



1. Complete the table of values.

Step number (n)	1	2	3	4	5
Number of matches (b)					

2. Describe in two different ways the pattern formed by the number of matches.

3. Rewrite the rule using the given pronumerals.

Exercise 8.1.3 Find the algebraic rule that links the top and bottom numbers in the table.

p	1	2	3	4
q	6	8	10	12

8.2 Decimal

8.2.1 Decimal place value

The table below shows some of the place columns in a decimal system.

Thousands	Hundreds	Tens	Units	•	Tenths	Hundredths	Thousandths
1000	100	10	1	•	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

Exercise 8.2.1 Write each of these decimals as a fraction with a power of 10 in the denominator.

1. 0.7 _____

2. 0.07 _____

3. 0.17 _____

4. 0.017 _____

5. 3.29 _____

6. 2.024 _____

Exercise 8.2.2 Write each of these as a single decimal.

1. $\frac{1}{10} + \frac{3}{100} + \frac{7}{1000}$ _____

2. $\frac{3}{10} + \frac{9}{1000} + \frac{1}{10000}$ _____

3. $\frac{3}{4} + \frac{3}{50} + \frac{3}{200}$ _____

4. $2 + \frac{9}{100} + \frac{3}{1000}$ _____

5. $12 + \frac{3}{10} + \frac{7}{10000}$ _____

Exercise 8.2.3 Express each of these as the sum of integers and fractions.

1. 0.312 _____

2. 0.021 _____

3. 2.103 _____

8.2.2 The relative sizes of decimals

Exercise 8.2.4 By considering each decimal as an amount of money, insert $<$ or $>$ to make a true statement:

1. 0.66 _____ 0.64

2. 1.02 _____ 0.98

3. 1.23 _____ 3.21

4. 5.67 _____ 6.57

5. 5.05 _____ 4.75

To arrange a series of decimals in ascending order:

- write each decimal with the same number of decimal places
- if the whole numbers are equal, arrange the decimals in order by comparing the decimal parts.

Exercise 8.2.5 Arrange these decimals in ascending order:

1. $0.2, 0.19, 0.08, 0.692, 0.641$ _____

2. $2.3, 2.45, 1.32, 2.21, 2.03$ _____

3. $1.29, 2.19, 2.02, 2.13, 3.02$ _____

4. $0.039, 0.39, 0.3, 0.03, 0.035$ _____

5. $1.02, 0.21, 2.01, 0.012, 0.102$ _____

A recurring decimal is a decimal in which one or more of the digits are repeated an infinite number of times. ($0.\dot{6}$ means $0.66666 \dots$; $0.2\dot{6}$ means $0.262626 \dots$)

Exercise 8.2.6 insert $<$ or $>$ to make a true statement:

1. 0.22 _____ $0.2\dot{2}$

2. $0.\dot{5}$ _____ 0.6

3. $0.\dot{5}$ _____ 0.4999

4. 0.8 _____ $0.\dot{7}$

8.2.3 The density of decimal

The term density on this exercise refers to the study of numbers that lie between other numbers.

To find the number that lies halfway between two decimals:

- add a zero to the end of each decimal
- use the last two digits of each decimal to find the number that lies halfway between the given decimals.

Exercise 8.2.7 Find the decimal which lies halfway between:

1. 0.9 and 1.2 _____

2. 1.4 and 1.7 _____

3. 11.2 and 11.5 _____

4. 3.7 and 3.8 _____

5. 0.5 and 0.6 _____

6. 0.17 and 0.18 _____

Exercise 8.2.8 Find the decimal which lies halfway between:

1. 0.02 and 0.05 _____

2. 0.13 and 0.18 _____

3. 0.37 and 0.43 _____

4. 2.01 and 2.7 _____

5. 3.52 and 3.68 _____

6. 5 and 5.03 _____

8.2.4 Addition and subtraction of decimals

To add or subtract decimals:

- write the decimals one below the other, with the decimal points and place columns in line
- write zeros in empty decimal places and add or subtract as whole numbers.

Exercise 8.2.9 Evaluate each of the following

1. $3.5 + 2.45 + 9.57 =$ _____

2. $0.234 + 1.05 + 0.83 =$ _____

3. $23 + 3.45 + 1.09 =$ _____

4. $21.3 - 12.8 + 0.24 =$ _____

5. $12.45 - 0.28 - 2.67 =$ _____

Exercise 8.2.10 Write the next two decimals in these sequences:

1. $0.045, 0.05, 0.055, \text{ _____}, \text{ _____} .$

2. $0.025, 0.02, 0.015, \text{ _____}, \text{ _____} .$

3. $1.325, 1.33, 1.335, \text{ _____}, \text{ _____} .$

4. $2.63, 2.635, 2.64, \text{ _____}, \text{ _____} .$

5. $1.28, 1.285, 1.29, \text{ _____}, \text{ _____} .$

Exercise 8.2.11 Express each decimal as a fraction and hence evaluate each of these:

1. $2.3 + 0.15$ _____

2. $1.285 + 0.047$ _____

3. $0.49 - 0.25$ _____

4. $0.184 - 0.042$ _____

5. $0.4 - 0.005$ _____

8.2.5 Multiplying a decimal by a whole number

To multiply a decimal by a whole number:

- ignore the decimal point and multiply the numbers
- insert the decimal point so that the answer has the same number of decimal places as in the question.
- when multiply a decimal by a power of 10, move the decimal point one place to the right for each zero in the power of 10.

Exercise 8.2.12 Evaluate each of the following:

1. 5.321×6 _____
2. 1.205×8 _____
3. 0.0364×10 _____
4. 9.18×100 _____
5. 20.12×1000 _____
6. 1.25×4000 _____

8.2.6 Multiplying a decimal by a decimal

To multiply two of more decimals:

- ignore the decimal points and multiply the numbers
- insert the decimal point so that the number of decimal places in the answer is equal to the total number of decimal places in the question.

Exercise 8.2.13

1. 0.23×0.6 _____
2. 1.25×0.4 _____
3. 12.5×0.04 _____
4. 0.005×0.8 _____
5. 0.04^3 _____

8.3 Problem Solving

Exercise 8.3.1

1. What is 8% of 5 kg 100 g?

2. Adam jumped 5.43 m in the long jump and Bob jumped 4.89 m. Who jumped further and by how much?

3. If \$283.80 was shared between two boys in the ratio 3:8, how much would each boy receive?

4. Find the cost of 65 litres of petrol at \$1.59 per litre.

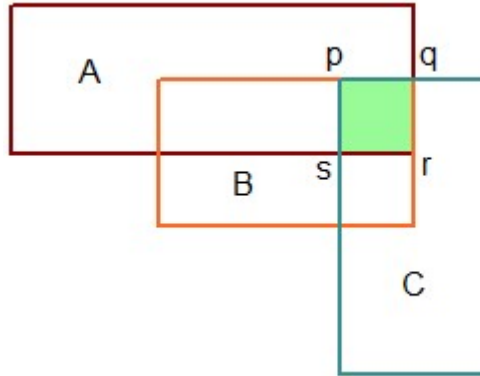
5. Cathy cut 9 equal pieces each measuring 3.8 m from a piece of string 40.8 m long. From the remaining piece, she cut the string into smaller pieces each measuring 34 cm long.

(a) How many shorter pieces did Cathy cut?

(b) What was the length of the string left in metres?

8.4 Maths Challenge

Exercise 8.4.1 A square $pqrs$ is an area overlapped by 3 rectangles as shown in the diagram. The ratios of the area of the square to each of the remaining unshaded part of the rectangle marked A, B, C are as follows:



- area of square $pqrs$: area A = 1 : 12
- area of square $pqrs$: area B = 2 : 7
- area of square $pqrs$: area C = 1 : 8

1. What is the ratio of area A to area B to area C?

2. If area A = 336 cm^2 , find the areas B and C.

8.5 Miscellaneous Exercises**Exercise 8.5.1**

1. Mary received a voucher of \$345. She spent part of it on several watches for her daughters and $\frac{1}{3}$ of the remaining amount on a dress for herself. If each watch cost \$23 and the dress cost \$69, find the number of watches Mary bought for her daughter.

2. The length of a fish tank is 22.5 cm. Its breadth is 2.5 cm shorter than the length and its height is 0.4 times the sum of the length and the breadth.

(a) What is the height of the fish tank?

(b) How much water is need to fill it up to $\frac{4}{5}$ full?

3. Johnson took 14 hours travel from Town A to Town B. His average speed for the last $\frac{2}{7}$ of his journey was $\frac{3}{4}$ of the average speed for the whole journey. The average for the whole journey was 80 km/h.

(a) What is the distance between Town A to Town B?

(b) How long did he take to complete the last $\frac{2}{7}$ of his journey?
