

Year 5 Term 4 Homework

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

Table of contents

3 Year 5 Term 4 Week 3 Homework	1
3.1 Topic 1 — Ratio	1
3.2 Topic 2 — Rate	2
3.3 Topic 3 — Percentages	3
3.4 Topic 4 — Simultaneous Equations	4
3.5 Problem Solving (Simultaneous Equations)	7
3.6 Test Paper 3	8
3.6.1 Part A	8
3.6.2 Part B	9
3.6.3 Part C	10
3.6.4 Part D	11

This edition was printed on February 15, 2017.

Camera ready copy was prepared with the **L^AT_EX²_ε** typesetting system.

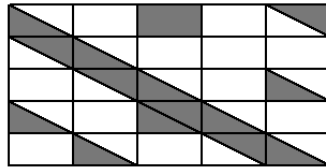
Copyright © 2000 - 2017 Yimin Math Centre (www.yiminmathcentre.com)

3 Year 5 Term 4 Week 3 Homework

3.1 Topic 1 — Ratio

Exercise 3.1.1

1. Express the ratio 112 : 42 in its simplest form is _____.
2. $\frac{3}{8}$ of a day in hours is _____.
3. Find the ratio of the shaded parts to the unshaded parts. _____.



4. The perimeter of a rectangular field is 600 m. Its length is twice that of the breadth. Find its area.

5. $\frac{5}{8}$ of a piece of ribbon was cut. $\frac{3}{5}$ m of it was left behind. What was the length of ribbon that was cut?

6. 168 sweets are shared among 4 children in the ratio 2 : 3 : 4 : 5. Find the difference of the number of sweets between the greatest and the smallest shares.

7. $\frac{5}{7}$ of the visitors to a zoo on a Saturday were children. There were 480 more children than adults. The ratio of boys to girls 1:3. How many more girls than boys were at the zoo?

3.2 Topic 2 — Rate

Exercise 3.2.1

1. Express 6.9 km in centimetres _____ cm .

2. 3.15 hours is equivalent to _____ minutes .

3. 50 m/s is equivalent to _____ km /h .

4. A car travels 96 km in 40 minutes. What is its average speed in km/h?

5. A racing car travels at 180 km/h. How far will it travel in $2\frac{1}{3}$ hours?

6. A country train travels at 60 km/h between two towns. The trip takes one and three quarters of an hours. What is the distance between these two towns?

7. Tony wants to cycle 12 km in one hour. He cycles the first 6 km at 10 km/h. How fast must he go for the rest of journey?

3.3 Topic 3 — Percentages

Exercise 3.3.1

1. What is 24% of 3 km and 50 m?

2. William went to the Easter Show. He spent 15% of his money on the entry fee and 25% on show-bags. How much money was left if he had \$120 at first?

3. John spent \$125 in March and spent 25% more in April. Find the amount of money spent in these 2 months.

4. Ray had \$50. He bought a shirt that cost \$38. Find the percentage decrease in the amount of money he had.

5. Mike had 200 bookmarks. He sold 75% of them at \$1.35 each and each of the rest at 25 cents more. What was the total sale?

3.4 Topic 4 — Simultaneous Equations

There are two main methods: **Substitution** and **Elimination**.

Example 3.4.1 Solve $x + 3y = 10$ and $2x - y = 6$

- By the **Substitution** method:

$$2x - y = 6 \quad (1)$$

$$x + 3y = 10 \quad (2)$$

First make 'y' the subject of equation (1) $y = 2x - 6$

Substitute $2x - 6$ for the letter 'y' into equation (2).

$$x + 3(2x - 6) = 10$$

$$x + 6x - 18 = 10$$

$$7x = 28$$

$$x = 4$$

Substitute $x = 4$ back into equation (1) to find y.

$$\text{Hence } y = 2x - 6$$

$$= 2 \times 4 - 6$$

$$= 2$$

- By the **Elimination** method:

$$2x - y = 6 \quad (1)$$

$$x + 3y = 10 \quad (2)$$

First multiply equation (1) by 3 to obtain the same y coefficient.

$$6x - 3y = 18 \quad (3)$$

$$x + 3y = 10 \quad (2)$$

Now simply add equation (3) to equation (2).

$$7x = 28$$

$$x = 4$$

Substitute $x = 4$ into either equation (1) or (2) to find y.

$$\text{Hence } y = 2x - 6$$

$$= 2$$

Exercise 3.4.1 Solve the following equations using the substitution method:

1. $2x + y = 4$ (1)

$x + y = 10$ (2)

2. $3x + 2y = 8$ (1)

$2x - 4y = -8$ (2)

3. $7x + 3y = 8$ (1)

$4x - y = -9$ (2)

4. $5x + 2y = -16$ (1)

$2x - 3y = 5$ (2)

Exercise 3.4.2 Solve these equations using the elimination method:

1. $x + 2y = 1$ (1)

$2x + y = 5$ (2)

2. $3x + 2y = 3$ (1)

$x - 2y = -15$ (2)

3. $5x + y = -6$ (1)

$x + 2y = 24$ (2)

4. $3x - 4y = 11$ (1)

$7x + 6y = 18$ (2)

3.5 Problem Solving (Simultaneous Equations)

Exercise 3.5.1

1. *Three pencils and two rulers costs \$1.06 and two pencils and three rulers cost \$1.29. Find the cost of each item.*

2. *The difference between two numbers is 11 and twice the smaller number minus four equals the larger number. Find the larger number.*

3. *Six small marbles and four large marbles have a combined weight of 30 g, while seven small marbles and two large marbles have a weight of 23 g. Find the weight of a small marble.*

4. *My father is five times as old as my sister. Four years ago he was nine times as old. How old is my father?*

3.6 Test Paper 3

3.6.1 Part A

1. The product of 2 numbers is 480 if one of them is 15 what is the other number?

2. 28 tens more than _____ is equal to 35 hundreds.
What is the missing number?

3. The average weight of 3 girls is 38.5 kg and the average of 4 boys is 42.7 kg. Find the average weight of the seven children.

4. Simplify these expanded forms:

(a) $3 \times 10^6 + 2 \times 10^4 + 5 \times 10^3 + 1 \times 10^1 + 8 \times 10^0 =$ _____

(b) $5 \times 10^6 + 3 \times 10^5 + 2 \times 10^4 + 8 \times 10^1 + 1 \times 10^0 =$ _____

(c) $1 \times 10^6 + 3 \times 10^3 + 6 \times 10^2 + 4 \times 10^1 + 9 \times 10^0 =$ _____

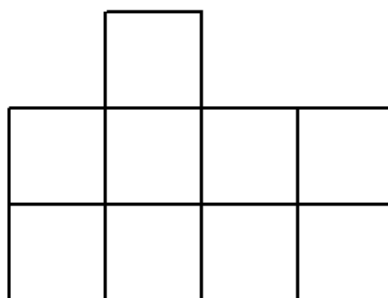
5. If November 30th is Thursday in 2006. What day will be New Year's Day?

3.6.2 Part B

- 4 apples and one watermelon cost \$8.40. The watermelon is four times as expensive as one apple. How much is each apple?

- A car can run 5500 m on 500mL of fuel. How far can it run for 35 L of fuel?

- How many quadrilaterals can be found in the figure below? _____



- What number does the Roman Numeral **MDCCLVI** stand for? _____

- What is the square root of the product of 18 and 8? _____

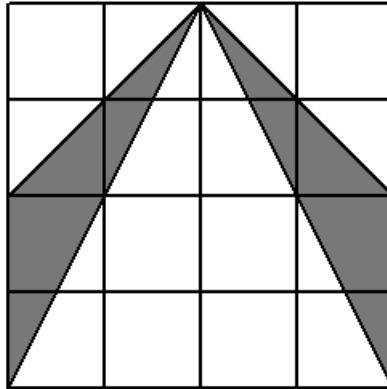
- $\sqrt{(6^2 + 8^2)} \times \sqrt{144} =$ _____

- 25% of _____ = 225. Find the missing number.

- The volume of a cube is 512 cm^3 . Find the total surface area of the cube.

3.6.3 Part C

1. What percentage of the following square has been shaded? _____



2. Each fortnight 20% of Keith’s pay goes to home loan repayments and 28% to tax. This leaves him with \$416.00. What is his weekly pay?

3. You do a math trial test each week with a total of 40 questions for each test. After 9 weeks you have achieved an average score of 80%.

(a) How many questions do you have to get right in the last test to bring your average score up to 81%?

(b) If you can answer all the questions correctly in the final test, what will be your new average score?

3.6.4 Part D

1. A square is transformed into a rectangle with a perimeter of 60 cm, by increasing one side by 5 cm and reducing the adjacent side by 3 cm. Find the size of the square.

2. Rectangle **ABCD** is $\frac{1}{2}$ as long and $\frac{1}{4}$ times as wide as rectangle **MNOP**. Find dimensions of each rectangle, if their perimeters are 20 cm and 48 cm respectively.

3. Adam has twice as much money as George. Daniel has \$15 more than Adam. If they have a total of \$102.50, how much do George and Daniel have altogether?
