

<b>Student Name:</b> _____	<b>Grade:</b> _____
<b>Date:</b> _____	<b>Score:</b> _____

## Table of Contents

<b>9 Year 8 Term 4 Week 9 Homework</b>	<b>1</b>
9.1 Term 4 Review 2 . . . . .	1
9.1.1 Further Percentages . . . . .	1
9.1.2 Ratio and rates . . . . .	3
9.1.3 Linear relationship . . . . .	5
9.1.4 Diagnostic Test . . . . .	6

This edition was printed on December 17, 2008.

Camera ready copy was prepared with the **L<sup>A</sup>T<sub>E</sub>X<sub>2</sub>e** typesetting system.

Copyright © 2000 - 2008 Yimin Math Centre ([www.yiminmathcentre.com](http://www.yiminmathcentre.com))

## 9 Year 8 Term 4 Week 9 Homework

### 9.1 Term 4 Review 2

#### 9.1.1 Further Percentages

- Increasing by percentage: add the percentage increase onto 100% then multiply the amount by this new percentage.
- Decreasing by a percentage: subtract the percentage from 100% then multiply the amount by this new percentage.
- Discount is expressed as a percentage of marked price.
- The commission is expressed as a percentage of the value of goods sold.
- Percentage profit =  $\frac{\text{Profit}}{\text{Cost Price}} \times \frac{100\%}{1}$ .

#### Exercise 9.1.1 Change the following percentages to fractions:

1. 12.5 % \_\_\_\_\_
2. 1.25 % \_\_\_\_\_
3. 125% \_\_\_\_\_

#### Exercise 9.1.2 Change the following decimals to percentages:

1. 0.03 \_\_\_\_\_
2. 0.865 \_\_\_\_\_
3. 1.25 \_\_\_\_\_

#### Exercise 9.1.3 Find the first quantity as a percentage of the second quantity:

1. 8 cm, 2m \_\_\_\_\_
2. 36 m 1.8 km \_\_\_\_\_
3. 96 kg, 24 kg \_\_\_\_\_

#### Exercise 9.1.4 Find:

1. 85% of 3000 kg \_\_\_\_\_
2. 105% 1600 mL \_\_\_\_\_
3. 560% of 9 kg \_\_\_\_\_

**Exercise 9.1.5 Increase the following amounts by the percentage indicated:**

1. \$55 by 20% \_\_\_\_\_
2. 160 L by 5% \_\_\_\_\_
3. \$125 by 105% \_\_\_\_\_

**Exercise 9.1.6 Decrease the following amount by the percentage indicated:**

1. 55 cm by 60% \_\_\_\_\_
2. \$45.50 by 94% \_\_\_\_\_
3. 65 kg by 12% \_\_\_\_\_

**Exercise 9.1.7 Find the discounted price of the items below:**

1. \$56, discounted by 25% \_\_\_\_\_
2. \$32, discounted by 65% \_\_\_\_\_
3. \$735 discounted by 52% \_\_\_\_\_

**Exercise 9.1.8 Calculate the profit as a percentage of cost price.**

1. CP \$250, SP \$375 \_\_\_\_\_
2. CP \$4350, SP \$5100 \_\_\_\_\_
3. CP \$1320, SP \$1410 \_\_\_\_\_

**Exercise 9.1.9**

1. An interest of \$25.32 was earned in three months on a balance of \$1688. What is the interest rate annually earned on the account?  
\_\_\_\_\_  
\_\_\_\_\_

2. Charles earns  $5\frac{1}{4}\%$  commission on his total sales. If he earns \$6636 in commission, what is the amount of his total sales?  
\_\_\_\_\_  
\_\_\_\_\_

**9.1.2 Ratio and rates****Exercise 9.1.10**

1.  $\frac{3}{8}$  of the fruit in a shop are apples. The rest are oranges and pears in the ratio 17: 13. There are 35 more apples than pears. What is the total number of fruits in the shop?

---

---

---

---

---

---

---

---

---

---

2. Last month, the ratio of male workers to female workers in a factory was 15:7. There were 56 female workers in the factory. Some of the male workers were retrenched this month. As a result, the ratio of the remaining male workers to female workers become 3:4. How many male workers have been retrenched?

---

---

---

---

---

---

---

---

---

---

3. *If Ken gives David \$160, he will have the same amount of money as David. If David gives Ken \$200, the amounts of money he has will be  $\frac{1}{2}$  that of Ken's. How much money has each of them?*

---

---

---

---

---

---

---

4. *The ratio of cows to ducks on a farm is 9:2. These animals have a total of 1600 legs. How many more cows than ducks are there on the farm?*

---

---

---

---

---

---

---

5. *The ratio of boys to girls at a party is 2:3. Each boy has 5 balloons while each girl has 3 balloons. The children have a total of 532 balloons. Find the total number of children at the party.*

---

---

---

---

---

---

---

**9.1.3 Linear relationship****Exercise 9.1.11 Find the value of the pronumeral in each of the following if:**

1.  $(k, 4)$  lies on the line  $y = 2x - 2$

---

---

---

2.  $(-2, m)$  lies on the line  $y = 1 - 4x$

---

---

---

3.  $(n, -5)$  lies on the line  $y = 2x + 3$

---

---

---

**Exercise 9.1.12 Determine the equation of line that passes through the points in each table:**

1.

$x$	-2	-1	0	1	2
$y$	-4	0	4	8	12

---

---

---

2.

$x$	-8	-6	2	6	14
$y$	-5	-4	0	2	6

---

---

---

**9.1.4 Diagnostic Test**

Question 1 ..... (5 marks)

Simplify  $8x^4 \times (-4y^2) \div 6x^3y^3$

---

---

---

1. \_\_\_\_\_

Question 2 ..... (5 marks)

Expand and simplify  $15x \times (3 + 2x^2) - (x^2 - x^3)$

---

---

---

2. \_\_\_\_\_

Question 3 ..... (5 marks)

Factorise  $4abc + 8ab + 16a^2c$

---

---

---

3. \_\_\_\_\_

Question 4 ..... (5 marks)

Expand and simplify  $(2x + 1)^2 - (2x - 1)^2$

---

---

---

4. \_\_\_\_\_

Question 5 ..... (5 marks)

How much did I spend altogether if I bought M books for \$X each and N magazines for \$Y each?

---

---

---

5. \_\_\_\_\_

Question 6 ..... (5 marks)

Find 105% of \$65.80.

---

---

---

6. \_\_\_\_\_

Question 7 ..... (5 marks)

Increase \$59 by 9%.

---

---

---

7. \_\_\_\_\_

Question 8 ..... (5 marks)

Decrease \$519 by 21%.

---

---

---

8. \_\_\_\_\_



Question 9 ..... (5 marks)

A car depreciates in values by 25% for the first year and for each later year by 15% of its value at the beginning of that year. Calculate the percentage decrease in the value of the car after 5 years.

---

---

---

9. \_\_\_\_\_

Question 10 ..... (5 marks)

If the rate of inflation is  $3\frac{1}{4}\%$  p.a., what will a car priced at \$35,600 this year be priced in 12 months time?

---

---

---

10. \_\_\_\_\_

Question 11 ..... (5 marks)

A number divided by three, plus nine equals twice the number minus sixteen. Find the number.

---

---

---

11. \_\_\_\_\_

Question 12 ..... (5 marks)

Given the formula  $S = \frac{a(r^n - 1)}{r - 1}$ , find S when a = 5, r = 2 and n = 8.

---

---

---

12. \_\_\_\_\_

Question 13 ..... (5 marks)

A woman is five times as old as her grandson. If she is sixty years older than the boy, what are their ages?

---

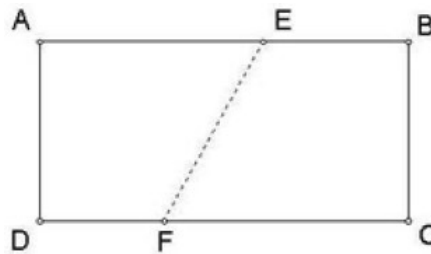
---

---

13. \_\_\_\_\_

Question 14 ..... (10 marks)

A rectangular piece of paper is shown in the figure,  $AD = 9$  cm,  $AB = 12$  cm. The piece of paper is folded along  $EF$  such that  $A$  and  $C$  touch each other. Find the length of  $EF$ .



---

---

---

---

---

14. \_\_\_\_\_

Question 15 ..... (5 marks)

After 20% reduction in sale prices a mountain bike was \$230. How much did it cost before the reduction?

---

---

---

15. \_\_\_\_\_

Question 16 ..... (5 marks)

On line segment ABCDE, D is the midpoint of AE. The length of BD is  $\frac{2}{3}$  the length of AB, and BC = CD. What percent of AE is AC?

---



---

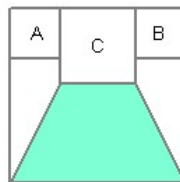


---

16. \_\_\_\_\_

Question 17 ..... (10 marks)

The large square shown contain smaller squares A, B and C. The areas are  $9\text{ cm}^2$ ,  $9\text{ cm}^2$  and  $16\text{ cm}^2$  respectively. Find the area of the shaded region.




---



---

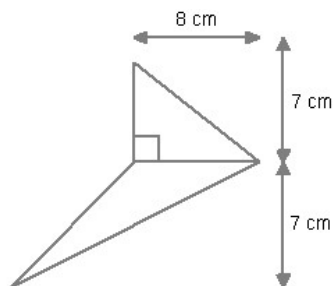


---

17. \_\_\_\_\_

Question 18 ..... (5 marks)

Find the area of the following composite shape.




---



---



---

18. \_\_\_\_\_