

# **PRIMARY MATHS SERIES**

## **REVISION GUIDE FOR STANDARDS 7 AND 8**

**Elijah M. Michieka**

**And**

**Paul Otinga**



[www.kenpro.org](http://www.kenpro.org)

Nairobi, Kenya



---

Kenya Projects Organization (KENPRO) is committed to the noble ideals of sharing knowledge through Research and Publishing engagements. The organization continues to reap from the rich traditions of knowledge inherited from the past generations. She is committed to passing these traditions to the present and future generations through publishing.

Published by Kenya Projects Organization (KENPRO),  
Magadi Road, Ongata Rongai | P.O. Box 3029-00200 Nairobi |  
Mobile: +254 725 788 400 |  
Email: [kenpropublications@gmail.com](mailto:kenpropublications@gmail.com) |  
Website: [www.kenpro.org](http://www.kenpro.org)

ALL RIGHTS RESERVED. No part of this resource may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without prior permission in writing from the author and/or publisher.

# RATIO AND PROPORTION

---

## 10.1 Specific Objectives

By the end of the unit, the learner should be able to:

- a) Work out problems involving ratio,
- b) Work out problems involving simple direct and indirect proportions and
- c) Compare using ratio.
- d) Sharing using ratio
- e) Increase and decrease quantities using ratio

## 10.2 Worked Exercise

1. Muraya and Dan each made 126kg of a mixture of maize and beans. Muraya mixed maize and beans in the ratio 4:3 while Dan mixed maize and beans in the ratio 4:3 while Dan mixed maize and beans in the ratio of 5:4. How many more kilograms?

A. 2                      B. 3                      C. 4                      D. 6

### *Working*

$$\begin{aligned} \text{In Muraya's mixture, maize : beans} &= 4:3 \\ \therefore \text{maize} &= \frac{\text{Ratio of maize}}{\text{Total ratio}} \times \text{No of kg} \\ &= \frac{4}{7} \times 126 \\ &= 72 \text{ kg} \\ \text{In Dan's mixture, maize: beans} &= 5: 4 \\ \text{Maize} &= \frac{\text{Ratio of maize}}{\text{Total ratio}} \times \text{No of kg} \\ &= \frac{5}{9} \times 126 \\ &= 70\text{kg} \\ \text{Difference} &= (72 - 70) \text{kg} \\ &= 2\text{kg} \end{aligned}$$

The correct answer is A(2kg)

2. A rectangular plot measures 12m by 10m. The length of the plot is increased in the ratio 3:2, while the width is decreased in the ratio 4:5. By what ratio is the area of the plot decreased?

A. 4:3

B. 5:4

C 6:5

D 3:2

**Working**

New length after increase

$$\frac{3}{2} \times 12 = 18\text{m}$$

New width after decrease

$$\frac{4}{5} \times 10 = 8\text{m}$$

Original area before the increase/decrease

$$= (12 \times 10)\text{m}^2$$

$$= 120\text{m}^2$$

$$\text{New area} = (18 \times 8) \text{ m}^2$$

$$= 144 \text{ m}^2$$

$$\text{New ratio} = 144 : 120$$

$$= 6 : 5$$

The correct answer is C (6 : 5).

3. Gladys keeps hens, ducks, and turkeys. The ratio of hens to ducks is 5:2. The number of turkeys is 35 less than the number of hens. How many turkeys are there if there are 30 ducks?

A. 105

B. 40

C. 75

D. 65

**Working**

$$\text{Hens : ducks} = 5 : 2$$

$$\text{Total ratio} = 7$$

$$\text{Hens} = \frac{5}{7} \text{ of } x$$

$$\text{Therefore } \frac{2}{7} \text{ of } x = 30$$

$$x = 30 \times \frac{7}{2}$$

$$\begin{aligned}
 x &= 30 \times \frac{7}{2} \\
 X &= 105 \text{ (Total hens and ducks)} \\
 \text{Hens} &= \frac{5}{7} \times 105 \\
 &= 75 \\
 \text{Turkeys} &= 40
 \end{aligned}$$

The correct answer is B (40)

4. Elijah and Paul shared some money in the ratio 5:8. Elijah got sh120 less than Paul. How much money did Paul get?

- A. Sh520                      B. Sh320                      C. Sh200                      D. Sh192

**Working**

Let the amount Paul got be t

Therefore Elijah got (t-120)

$$\begin{aligned}
 \text{Therefore } t - 120 : t &= 5 : 8 \\
 \frac{t - 120}{t} &= \frac{5}{8} \\
 8t - 960 &= 5t \\
 8t - 5t &= 960 \\
 3t &= 960 \\
 t &= \text{sh}320
 \end{aligned}$$

Therefore Paul = sh 320

The correct answer is B (sh320)

5. A contractor employed 60 men to complete a piece of work in 150 days. How many more days would 50 Men take to complete the same work?

- A.180                      B.30                      C. 40                      D. 50

**Working**

60 men take                      150 days

1 man take                      (150x60) days

Therefore 50 men will take (  $\frac{150 \times 60}{50}$  ) days

$$= 180 \text{ days}$$

How many more? (180 – 150) days

$$= 30 \text{ days}$$

The correct answer is B (30 days)

6. Eighteen men can finish to dig a piece of land in 45 days. How many days would 15 men take to finish the same piece of land?

A.54

B.25

C.7 ½

D.9

### ***Working***

18 men take 45 days

1 man takes (45 x 18) days

Therefore 15 men will take  $\frac{(45 \times 18)}{15}$

$$= 54 \text{ days}$$

The correct answer is A (54 days)

### **10. 3 Practice Test Paper 10**

1. Jane shared a sum of money with Rachael in the ratio 3:7. If Rachael got sh 12 more than Jane, how much did Jane get?

A.sh30

B.sh21

C.sh18

D.sh9

2. In a school the ratio of boys to girls is 3:2. There are 400 pupils in the school. During an athletics competition an eighth of the girls took part. How many girls did not take part?

A.140

B.20

C.210

D.160

3. Six people working for 5 days were paid a total of sh3600. How many more would the same number of people be paid for 12 days?

- A.sh5900                      B.sh16000                      C.sh10100                      D.sh21900

4. Six taps take 5 hours to fill a tank with water. How much longer will four similar taps take to fill the same tank?

- A.2.5h                      B.7.5h                      C.12.5h                      D.25h

5. In Kathuure's farm, the ratio of cows to goats is 5:3, while that of goats to sheep is 4:7. If he has 21 sheep, what is the total number of his animals?

- A.33                      B.32                      C.41                      D.53

6. The ratio of girls to boys in a school is 3:2. If there are 120 more girls than boys, how many boys are there in the school?

- A.240                      B.360                      C.400                      D.600

7. A man hired 5 people to weed a garden in six days. Two of people did not turn up for the work. How many more days were needed to complete the work?

- A.16                      B.10                      C.9                      D.4

8. What is the ratio 3:5 expressed as a decimal?

- A.1.6                      B.0.625                      C.0.6                      D.0.375

9. In the year 2008, there were 850 pupils in a school of whom  $\frac{3}{5}$  were boys. In the year 2009, ten girls joined the school and twenty boys transferred to another school. What was the ratio of boys to girls in the year 2009?

- A.3:2                      B.53:33                      C. 13:8                      D.7:5

10. Fifteen painters can paint a number of houses in 12 days. If the painters are increased by 5, how many days less would it take the painters working at the same rate to paint the houses?

- A.24                      B.9                      C.4                      D.3

11. Soita and Solomon shared some money such that Soita got  $\frac{3}{5}$  of the profit .What was the ratio of Soita's share to Solomon's share?

- A.3:2                      B.2:3                      C.3:5                      D.5:3

12. A firm hired 9 men to work in a construction site for 15 hours. How many more hours did it take them to complete the piece of work if 3 men did not turn up?

- A.30h                      B.22h                      C.5h                      D.7h 30min

13. A farmer harvested 144 bags of beans in the year 2010. In 2011, the yield increased in the ratio 4:3. The farmer supplied all the bags harvested in 2011 equally to three children homes. How many bags of maize did each home get?

- A.192                      B.64                      C.48                      D.36

14. In class 8 the number of boys to girls is 2:3. What is the percentage of the boys in the class?

- A.33  $\frac{1}{3}\%$                       B.40%                      C.60%                      D.66  $\frac{2}{3}\%$

15. Eighteen tractors can take 72days to complete preparing some land. If two tractors broke down, how many more days would the remaining number of tractors, working at the same rate, take to complete the work?

- A.9                      B.81                      C.153                      D.575

16. Awour and Brenda shared some money in the ratio 3:4. If the money was sh8400, how much did Awour get?

- A.sh3600                      B.sh4800                      C.sh6300                      D.sh11200

17. It takes 10 hours for four boy s to complete a certain work. How many more boys would be required in order for them to do the same work in two hours?

- A.1                      B.16                      C.24                      D.20

18. Forty two men were hired to repair a stretch of road in 14 days. How many more men should be hired if the work was to be finished in 12days?

- A.6                      B.7                      C.49                      D.91



19. Sixty workers can dig a field in 12 days. How many more workers are required so as to do the work in 8 days?

- A.40                      B.24                      C.8                      D.10

20. In a group of 126 spectators the ratio of men to women was 3:4. What is the new ratio if 2 more men and 8 more women joined the group of spectators?

- A.7:10                      B.5:12                      C.13:16                      D.1:4

21. A factory hires 12 workers to complete a piece of work in 5 hours. If 2 of the workers do not turn up, how long will it take to complete the work?

- A.60h                      B.30h                      C.24h                      D.6h

22. What is the ratio 4:5 expressed as a percentage?

- A.44  $\frac{4}{9}\%$                       B.55  $\frac{5}{9}\%$                       C.80%                      D.125%

23. A contractor hired 48 laborers to complete a job in 24 hours. If 12 laborers failed to turn up for the job, how many more hours did those who turned take to complete the job?

- A.8                      B.32                      C.48                      D.72

24. Fifteen people working at the same rate would complete some work in 10 days. How many days would 6 people need to complete the same work?

- A.4                      B.9                      C.25                      D.150

25. In a class the ratio of boys to girls is 3:2. In an examination  $\frac{2}{3}$  of the girls passed the exams. If twelve girls passed the exams, how many boys were in the class?

- A.27                      B.18                      C.45                      D.36

26. In a school, the ratio of boys to girls is 5:4. There are 200 boys in the school. How many pupils are there in the school?

- A.450                      B.160                      C.360                      D.500

27. It takes six tractors seven days to plough a field. How long would four such tractors take to plough the same field?

- A.  $4\frac{2}{3}$                       B.  $10\frac{1}{2}$                       C. 42                      D.  $3\frac{3}{7}$

28. In a town the ratio of men women is 2:3. During a party,  $\frac{1}{3}$  of the women contributed. If 2250 women contributed how many men are there in the town?

- A. 2700                      B. 10125                      C. 4500                      D. 6750

29. The ratio of ole Sayori's goats to cows was 3:2. He sold  $\frac{1}{3}$  of his goats. If he sold 50 goats how, many cows does he have?

- A. 150                      B. 100                      C. 250                      D. 20

30. The length of the base of a triangle is 15cm and it's height is 12cm. The length of the base is increased in the ratio 6:5, while it's height is decreased in the ratio 2:3. By what ratio is the area of the triangle decreased?

- A. 5 : 6                      B. 5 : 9                      C. 4 : 5                      D. 2 : 3

#### 10.4 Practice Test 10 Answer (Work out)

1		6		11		16		21		26	
2		7		12		17		22		27	
3		8		13		18		23		28	
4		9		14		19		24		29	
5		10		15		20		25		30	