



Ch 5: Ratios Test

Section	No. of questions	Marks
A: Vocabulary knowledge	5	5
B: Multiple Choice	10	10
C: Short Answer	7	30
D: Analysis Problem	2	5

Your marks

/50 %

Instructions

- Read questions carefully
- Calculators may be used.
- No sharing of equipment.
- Use a pencil when completing questions

Section A: Vocabulary Knowledge

(6 marks)

Complete the sentence by choosing the appropriate word from the word list below.

- 1 To compare ratios, one method is to convert them to fractions with the _____
- 2 Ratios must always be calculated using the same _____.
- 3 A _____ statement can be solved by cross multiplication.
- 4 In order to simplify a ratio we must divide through by the _____
- 5 When two ratios are equal, then the ratios are said to be _____.

WORD LIST

Divide	Lowest common denominator	Proportion	Equation
Highest common factor	Units	Equivalent	Multiply

Section B: Multiple Choice

- 10 questions worth 1 mark each
- Working out is not necessary
- Write answers in the appropriate box below.

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10

Question 1

The simplified ratio of 8 cm: 16 mm is

- A. 1:2
- B. 2:5
- C. 4:1
- D. 4:5
- E. 5:1

Question 2

Mick bought eight watermelons, eleven mangos and 6 nectarines. What is the ratio of nectarines to watermelons?

- A. 6:25
- B. 3:4
- C. 6:11
- D. 8:6
- E. 6:19

Question 3

What is the simplest form of the ratio 8 mm : 1 cm ?

- A 4 : 5
- B 0.8:0.10
- C 10: 8
- D 80:100
- E 8: 10

Question 4

A classroom has 15 girls and 11 boys.

The ratio of boys to the total number of students in the class is:

- A 11:15
- B 26:11
- C 15:26
- D 15:11
- E 11:26

Question 5

16:40 as a fraction in its simplest possible is:

- A $\frac{40}{16}$
- B $\frac{16}{40}$
- C $\frac{1}{2.5}$
- D $\frac{2}{5}$
- E $\frac{5}{2}$

Question 6

8:12 is equivalent to $x : 84$. What is the value of x ?

- A 80
- B 64
- C 56
- D 24
- E 20

Question 7

Find the value of a given that $40 : 8 = a : 6$

- A $a = 48$
- B $a = 42$
- C $a = 38$
- D $a = 32$
- E $a = 30$

Question 8

It took 20 minutes for Jim to run 7.2 km. On average, how many kilometres does Jim run each minute?

- A 7.2 km/min
- B 0.36 km/min
- C 0.72 km/min
- D 0.036 km/min
- E 3.6 km/min

Question 9

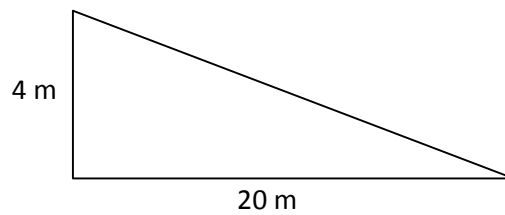
Rice costs \$1.80 per kilogram. If Robyn buys 6.5 kg, how much will it cost her?

- A \$11.70
- B \$10.80
- C \$9.60
- D \$12.20
- E \$13.00

Question 10

There is a hill that is 4 metres tall and 20 metres horizontally across (see diagram below). Find the gradient of this hill. Remember to simplify your answer if possible.

- A $\frac{20}{4}$
- B $\frac{5}{1}$
- C $\frac{4}{20}$
- D $\frac{1}{5}$
- E $\frac{20}{1}$

**Section C: Short Answer Section**

- Working out must be shown to gain full marks.
- Remember to simplify where possible.

Question 1**(8 marks)**

Write the following ratios into their simplest form.

a) 15: 25

b) 18:33

c) 450 m : 2 km

d) 7 min : 35 sec

e) 5.12 : 8

Question 2**(2 marks)**

Work out if the following pair of ratios is in proportion.

18:72 and 2:8

Question 3**(8 marks)**

Find the value of each unknown

a. $n : 15 = 4 : 5$

b. $\frac{48}{k} = \frac{4}{3}$

c. $\frac{g}{72} = \frac{7}{9}$

d. $x : 8 = 5 : 3$

Question 4**(2 marks)**

The ratio of boys to girls in a class is 4:7.

a) If there are 12 boys, how many girls are there?

b) If there are 14 girls, how many boys are there?

Question 5**(4 marks)**

In the following pairs, which is the larger ratio?

Make sure that you show your reasoning for both questions.

a) $3 : 7$ or $4 : 9$

b) $13 : 12$ or $23 : 20$

Question 6**(4 marks)**

A sport store has a sale on sporting equipment. In the sale basket there are 16 soccer balls, 8 tennis balls and 10 cricket bats.

- a) Write the ratio that compares the number of soccer balls to the total pieces of equipment, in simplest form. *Show all steps in your working.*
- b) Write the ratio that compares the number of soccer balls to cricket bats, in simplest form. *Show all steps in your reasoning.*

Question 7**(2 marks)**

If a car uses 35 L of petrol to travel 385 km, how many kms can I travel for every litre of petrol?
Show your reasoning.

Section D: Analysis Section (5 marks)

Working out must be shown to gain full marks.

Question 1

(2 + 1 marks)

Francine and John were getting married. They were quoted a price for the wedding reception of \$5700 for 60 guests. However, after the invitations went out, they found that 55 guests were coming.

(a) What should the new quote for the wedding reception be? Show your working.

(b) What is the cost per guest?

Question 2

(2 marks)

A bathtub is being filled to 120 L. It takes 2.5 minutes to fill the tub with warm, soapy water. What is the rate at which it fills?

END OF TEST