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| Year  9 | | Mathematics Test  Ratio & Rates | | Non Calculator |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper. | | | |
| 1. | In a class which normally has 30 students, 5 are absent and the rest are in class. What is the ratio in simplest terms of those absent from class to those present in class?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 2. | A radio station divides the air time between music and talk in the ratio 7 : 5. Next week the station will be on air for 168 hours. How many hours of music should it play?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 3. | Stella’s magazine pile on her desk has trade magazines and trashy magazines in the ratio 4 : 11. There are 20 trade magazines. How many trashy magazines are there?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 4. | Write the ratio  in simplest form using whole numbers.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 5. | Simplify the ratio 2.5 kg : 1500 g.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 6. | Francis is a pastry chef and makes 300 cup cakes. He ices them with chocolate, vanilla and strawberry icing in the ratio 3 : 2 : 1. How many cupcakes will have vanilla icing?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 7. | Martha rides her bike at an average speed of 16 km/h for  hours. How far did she ride?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 8. | Cecil works for the parks department of the council and used a ride-on lawnmower to mow 36 000 m2 of lawn in 4 hours. At what rate was he mowing in m2 /minute?  .........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 9. | Josie picks 180 kg of fruit in 3 hours. At the same rate, how long would it take her to pick 600 kg of fruit?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 10. | Anna’s car uses 27 litres of fuel to travel 360 km. What is it’s consumption rate in litres/100km?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 11. | Write a speed of 8 metres/second in km/h.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 12. | Mike ploughs a field at a rate of 800m2/min and Harry ploughs at a rate of 4.5 hectares/hour. Who ploughs the quickest? (Explain your answer)  ..........................................................................................................................................................    ..........................................................................................................................................................  .......................................................................................................................................................... | | | |

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| Year  9 | | Mathematics Test  Ratio & Rates | | Calculator Allowed |
| Multiple Choice Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section. | | | |
| 1. | The ratio  is equivalent to:  A. 5 : 8 B. 5 : 4 C. 5 : 2 D. 5 : 1 | | | |
| 2. | A shared path by a lake is used by walkers and cyclists in the ratio 4 : 3. Last week it was used by 120 cyclists. How many walkers used it last week?  A. 90 B. 160 C. 240 D. 280 | | | |
| 3. | When 4.5 kg is divided in the ratio 8 : 1, the smaller part is  A. 500 g B. 562.5 g C. 600 g D. . 642.9 g | | | |
| 4. | Charles uses  of his allowance for food and the remainder for entertainment. What is the ratio of money spent on food to that on entertainment?  A. 2 : 5 B. 2 : 1 C. 2 : 3 D. 3 : 2 | | | |
| 5. | Max attended an SRC meeting where there were 20 students and the ratio of boys : girls was 2 : 3. How many more girls than boys were the SRC meeting?  A. 1 B. 2 C. 4 D. 6 | | | |
| 6. | Dayna makes 200 dolls for charity. She dresses 25% of them in red,  of them in blue and the remainder in white? What is the ratio of red : blue : white dresses?  A. 25 : 3 : 1 B. 4 : 3 : 1 C. 4 : 3 : 5 D. 3 : 4 : 5 | | | |
| 7. | A car is uses fuel at a rate of 8.4 litres per 100 km. How far could it travel on a tank which holds 42 litres?  A. 200 km B. 400 km C. 420 km D. 500 km | | | |
| 8. | Raymond plays the drums. For a particular song he needs to keep a rhythm of 48 beats/minute. He plays a total of 204 beats during the song. The song lasts for about:  A. 4 minutes. B. 4 minutes and 15 seconds.  C. 4 minutes and 25 seconds. D. 4 minutes and 30 seconds. | | | |
| 9. | Gaye ran a half marathon which is 21 km, in 2 hours and 6 minutes. What was her average speed in km/h?  A. 8 km/h B. 9 km/h C. 10 km/h D. 12 km/h | | | |
| 10. | On a certain day, one Australian dollar will buy $US1.05 in US dollars and will also buy €0.75 Euros. Mark has $400 Australian dollars and he uses some of this to buy $US210, and buys Euros with the remainder. How many Euros does he buy?  A. €75 B. €100 C. €150 D. €300 | | | |
| 11. | A rate of $12 per hour is the same as :  A. 10 cents per minute B. 20 cents per minute  C. 30 cents per minute D. 40 cents per minute | | | |
| 12. | Chen has a trial bike that averages 200mL of fuel per minute and Raisa has one which averages 14 litres per hour. Which will use the most fuel in a 3 hour ride?  A. Chen’s B. Raisa’s  C. They will use the same amount D. There isn’t enough information to tell. | | | |

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| Year  9 | Mathematics Test  Ratio & Rates | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Multiple Choice Answer Sheet | |

Completely fill the response oval representing the most correct answer.

1. A B C D

2. A B C D

3. A B C D

4. A B C D

5. A B C D

6. A B C D

7. A B C D

8. A B C D

9. A B C D

10. A B C D

11. A B C D

12. A B C D

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| Year  10 | Mathematics Test  Ratio & Rates |
| Answer Sheet |

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| Short Answer | |
| 1 | 1 : 5 |
| 2 | 98 hours |
| 3 | 55 trashy magazines |
| 4 | 7 : 25 |
| 5 | 5 : 3 |
| 6 | 100 vanilla cupcakes |
| 7 | 36 km |
| 8 | 150 m2/min |
| 9 | 10 hours |
| 10 | 7.5 /100km |
| 11 | 28.8 km/hr |
| 12 | Mikes rate 4.8 Ha/hr is fastest. |

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| Multiple Choice | |
| 1 | A |
| 2 | B |
| 3 | A |
| 4 | C |
| 5 | C |
| 6 | D |
| 7 | D |
| 8 | B |
| 9 | C |
| 10 | C |
| 11 | B |
| 12 | B |