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| Year  10 | | Ratio Rates and Proportion Practice Test | | Non Calculator |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this Practice Test paper. | | | |
| 1. | The ratio of boys to girls in a class is 4 : 5. If there are 12 boys in the class, how many students are there in the class?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 2. | Kristina buys 25 games for her 2 children and divides them in the ratio of their ages, which is 3:2. How many games does the eldest child receive?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 3. | Simon makes 3 litres of lemonade and Ursula makes 1200 millilitres of lemonade. What is the ratio of the amounts of lemonade that they made in simplest form?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 4. | A concrete mix uses **cement : sand : gravel** in the ratio **6 : 10 : 7** by volume. Kerry has enough cement to fill 9 buckets. How many buckets of sand and gravel will he need?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 5. | Justin travels a distance of 280 km at an average speed of 80 km/h. How long did the trip take?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 6. | A car uses fuel at the rate of 9 kilometres/litre. How far could it travel on 40 litres of fuel?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 7. | A combine harvester can cover 4 hectares/hour. How many hours would it take to cover 36 hectares?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 8. | Kerrie collects 200 shells on the beach in 4 hours. Express this as a rate in shells per hour.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 9. | When a vehicle is moving at a constant speed, the distance travelled (*d* kilometres) is directly proportional to the time (*t* hours) that it has been travelling. For a certain vehicle this can be written as . What is the distance travelled by this vehicle in 7 hours?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 10. | The number of people (*N*) that can be carried on *B* buses is given by the equation . How many buses would be needed to carry 420 people?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 11. | When travelling from Bathurst to Lithgow, the time taken (*t* hours) is inversely proportional to the speed (*s* km/hour). This can be written as . What is the time taken when riding a cycle at a speed of 15 km/h?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 12. | The time (*T* minutes) to cook a meal is inversely proportional to the power (*P* kilowatts) of the microwave oven. For a frozen dinner, this is given by the equation . How long would it take to cook the dinner in a 600 watt microwave?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 13. | The height (*h* metres) of a tree is directly proportional to the time (*t* years) since it germinated. If the height after 3 years was 1.5 metres, find the height after 7 years.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
|  | **Questions 14 and 15 refer to the graph below.**  The time (T) taken to finish the weekly housework is inversely proportional to the number of people (N) helping out. The graph represents this. | | | |
| 14. | How many people are needed to complete the housework in 2 hours?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 15. | How many extra hours will the house work take if there are 4 people who normally do the housework, but three of them are away for the week?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |

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| Year  10 | | Ratio Rates and Proportion Practice Test | | Calculator |
| Multiple Choice Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Mark all your answers on the accompanying multiple choice answer sheet, not on this Practice Test paper. You may do any working out on this Practice Test paper. Calculators are allowed for this section. | | | |
| 1. | From a group of 240 students, 100 are at sport and the rest are in class. What is the ratio in simplest terms of those at sport to those in class?       1. 12 : 5 B. 5 : 7 C. 17 : 5 D. 7 : 5 | | | |
| 2. | The rate of flow of water from a dam is 24 kilolitres/hour. How long would it take for 150 kilolitres to flow from the dam?  A. 6 hours and 15 minutes  B. 6 hours and 25 minutes  C. 8 hours  D. 8 hours and 15 minutes | | | |
| 3. | The directions to mix fertiliser say to add 4 teaspoons of granules to 500 millilitres of water. If each teaspoon holds 4 grams of granules, what is the rate for mixing the fertiliser?  A. 8 grams/litre  B. 16 grams/litre  C. 32 grams/litre  D. 64 grams/litre | | | |
| 4. | Mike runs 20 laps of the oval per day. If each lap is 500 metres, how many kilometres would he have run in the month of January?  A. 280 kilometres B. 300 kilometres  C. 310 kilometres D. 620 kilometres | | | |
| 5. | Mary’s car uses 20 litres of fuel to travel 250 km. The consumption rate is:  A. 16 litres per 100 kilometres  B. 8 litres per 100 kilometres  C. 12.5 litres per 100 kilometres  D. 25 litres per 100 kilometres | | | |

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|  | **Questions 6 and 7 refer to the information below.**  **The electrical current in a wire is inversely proportional to the resistance.** |
| 6. | Which graph could represent the relationship between current (*C*) and the resistance (*R*).  A. B.    C. D. |
| 7. | If the resistance were doubled, what would be the effect on the current?  A. The current would be doubled.  B. The current would be squared.  C. The current would be halved.  D. The current would stay the same. |
| 8. | In a National Park, the ratio of native trees to pine trees is 5 : 1. If there are 3000 native trees how many pine trees are there?  A. 500 B. 600 C. 2 500 D 3 000 . |
| 9. | In a Test match the ratio of the runs scored by the English to the runs scored by the Australians 16 : 7. If the English scored 368 runs, how many runs were scored by the Australians?  A. 23 runs B. 112 runs C. 161 runs D. 529 runs |
| 10. | Janis and Hannah share their earnings from odd jobs in the ratio 4 : 5. If they earned a total of $108.00 on a weekend, how much would Hannah get as her share?  A. $21.60 B. $27.00 C. $48.00 D. $60.00 |
| 12. | Marty calculates that his bicycle travels at 5 metres per second. What is this speed in kilometres per hour?  A. 180 km/h B. 18 km/h C. 1.4 km/h D. 0.3 km/h |
| 13. | John gives  of his wage to charity. The ratio of the amount he gives to charity compared to the amount he has remaining is:  A. 1 : 8 B. 8 : 1 C. 1 : 7 D. 7 : 1 |
| 14. | The ratio of flour to sugar in a recipe is 8 : 3. If I have 20 cups of flour, how much sugar should I use?  A.  cups B.  cups C.  cups D.  cups |
| 15. | When we divide 2 hours in the ratio 7 : 5, the result is. :  A. 70 min : 50 min B. 50 min : 70 min   1. 35 min : 25 min D. 14 min : 10 min |
| 16. | A two metre length of wood costs $ 6.40. What would be the cost of a piece that was 2.5 metres in length?   1. $8.00 B. $10.24 C. $32 D. $9.60 |

Ratio Rates and Proportion

Multiple Choice Section

Answer Sheet

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

13. A B C D

14. A B C D

15. A B C D

16. A B C D