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| Year  9 | | Mathematics Test  Index Laws | | Non Calculator |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper. | | | |
| 1. | Simplify .  .......................................................................................................................................................... | | | |
| 2. | Simplify .  .......................................................................................................................................................... | | | |
| 3. | Simplify .  .......................................................................................................................................................... | | | |
| 4. | Simplify .  .......................................................................................................................................................... | | | |
| 5. | .  .......................................................................................................................................................... | | | |
| 6. | Simplify .  ......................................................................................................................................................... | | | |
| 7. | Evaluate  .......................................................................................................................................................... | | | |
| 8. | Write  without using an index.  .......................................................................................................................................................... | | | |
| 9. | Evaluate .  .......................................................................................................................................................... | | | |
| 10. | Simplify .  .......................................................................................................................................................... | | | |
| 11. | Simplify .  .......................................................................................................................................................... | | | |
| 12. | Simplify .  .......................................................................................................................................................... | | | |
| 13. | Simplify .  .......................................................................................................................................................... | | | |
| 14. | Simplify .  .......................................................................................................................................................... | | | |
| 15. | Simplify .  .......................................................................................................................................................... | | | |
| 16. | Simplify .  .......................................................................................................................................................... | | | |
| 17. | The distance to the star K137 is 48 000 000 000 000 000 km. Express this in scientific notation.  .......................................................................................................................................................... | | | |
| 18. | The diameter of a microscopic particle is 0.000 000 046 metres. Write this in scientific notation.  .......................................................................................................................................................... | | | |
| 19. | Write  without using scientific notation.    .......................................................................................................................................................... | | | |
| 20. | Write  as a normal decimal numeral.    .......................................................................................................................................................... | | | |
| 21. | Write  without using indices  .......................................................................................................................................................... | | | |
| 22. | Evaluate .  .......................................................................................................................................................... | | | |
| 23. | Evaluate .  .......................................................................................................................................................... | | | |
| 24. | Write as a power of *s*.  .......................................................................................................................................................... | | | |
| 25. | Simplify .  .......................................................................................................................................................... | | | |
| 26. | Simplify .  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 27. | Simplify .  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 28. | Simplify .  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |

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| Year  9 | | Mathematics Test  Index Laws | | 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. | A. 7*c8* B. 7*c*15 C. 12*c8* D. 12*c15* | | | |
| 2. | A. 4*m*3 B. 4*m*8 C. 36*m*3 D. 36*m8* | | | |
| 3. | A. 9*x6y6* B. 9*x5y5* C. 18*x6y6* D. 18*x5y5* | | | |
| 4. | A.  B.  C.  D. | | | |
| 5. | A.  B.  C.  D. | | | |
| 6. | The fraction  simplifies to:  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. 0 B. 1 C. 10 D. 1 000 | | | |
| 12. | 6.45 × 10-3 =  A. 0.000 645 B. 0.006 45 C. 645 D. 6 450 | | | |
| 13. | 2 380 000 000 when written in standard notation is :  A.  B.  C.  D. | | | |
| 14. | can be written as:  A.  B.  C.  D. | | | |
| 15. | 1. -64 B. -8 C.  D. | | | |
| 16. | =  A.  B.  C.  D. | | | |
| 17. | =  A.  B.  C.  D. | | | |
| 18. | A.  B.  C.  D. | | | |

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| Year  9 | Mathematics Test  Index Laws | 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

13. A B C D

14. A B C D

15. A B C D

16. A B C D

17. A B C D

18. A B C D

|  |  |
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| Year  10 | Mathematics Test  Index Laws |
| Answer Sheet |

|  |  |
| --- | --- |
| Short Answer | |
| 1 |  | 15 |  |
| 2 |  | 16 |  |
| 3 |  | 17 |  |
| 4 |  | 18 |  |
| 5 |  | 19 | 145 000 000 |
| 6 |  | 20 | 0.000 092 05 |
| 7 |  | 21 |  |
| 8 |  | 22 |  |
| 9 |  | 23 |  |
| 10 |  | 24 |  |
| 11 |  | 25 |  |
| 12 |  | 26 |  |
| 13 |  | 27 |  |
| 14 |  | 28 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Multiple Choice | | | | | |
| 1 | C | 7 | D | 13 | C |
| 2 | B | 8 | B | 14 | D |
| 3 | D | 9 | C | 15 | C |
| 4 | A | 10 | D | 16 | A |
| 5 | D | 11 | B | 17 | A |
| 6 | A | 12 | B | 18 | A |