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| Middle School |
| **STUDENT NAME:**   **CLASS: \_\_\_\_\_\_\_**  **TEACHER NAME:** |

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| **UNIT: Number**  **ISSUE TOPIC Fractions, Index numbers, scientific notation**  **ASSESSMENT TASK: Test**  **ASSESSMENT DESCRIPTION: This test consists of 3 parts covering.**   * Knowledge and Understanding   **CONDITIONS OF ASSESSMENT:**   * **Length: no more than 2 lessons – the amount of time to be determined by the teacher and the requirements of the students.** | |  | **Mathematics** |
|  |
| **YEAR**  **2010/2011**  **TERM 2**  **TASK: Test**  ***Number*** |
| **SUMMARY OF RESULTS** | |
| **CRITERIA ASSESSED** | **STANDARD** |
| **KNOWLEDGE & UNDERSTANDING** |  |
| **COMMUNICATING** |  |
| **OVERALL RESULT** |  |

AIS 8/9 Maths Unit Test - NUMBER

# PART A

Question 1

1. Find x:
2. Find x:

Solve the following:

1. =
2. =

Simplify

1. 2e2 x 5e3
2. 8e6 ÷ 4e5
3. (e6)2
4. 1000
5. 9 ½

Question 2

Write in scientific notation

1. 32 000 000
2. 0.000 003 02

Write in standard form

1. 4.013 x 105
2. 2.1 x 10-3

# PART B

Show full working.

Question 3

Solve:

1. 2
2. ()2  X ( -2 )-3

Question 4

Simplify and an:

1. (2e6)2 x 3e3
2. 82 x a4

Simply and answer in scientific notation:

1. (7.02 x 104)(1.05 x 10-3)

# PART C

Show full working.

Question 5

Simplify and write your answer in index notation

1. ( m2 x m6(m4 x n3)2)4
2. (y6)4 ÷ (*x*2 x y4) x y x y0
3. ÷
4. [(1.1 x 103)-2(3 x 104)]-3
5. []-1/3  ÷ []4/3

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| Year: 8/9 KLA: Mathematics Assessment name: Number Test Term 2 2011 | | | | Student | | | |
| Purpose: *To apply number properties and operations when working with fractions, index numbers and scientific notation..* | | | | | | | |
|  | |
| Knowledge & Understanding | Knowledge & Understanding | | Knowledge & Understanding | | Communicating |  |
| *Represents and describes fractions in different ways* | *Uses an efficient method to evaluate powers, including powers on a calculator ie xy and (-) keys.* | | *Uses scientific notation to interpret very large or very small numbers..* | | *Communicates thinking and justifies reasoning, using appropriate mathematical language, representations and technologies.* |  |
| * Solves index numbers involving fractions. (Q5 part d & f) | * Solves complex index number problems involving multiple steps (Q5) | | * Solves problems using scientific notation and index numbers (Q4, Q5e) | | * Clear and consistent communication and justification of thinking and reasoning using mathematical language, representations and technologies. | A |
|  |  | |  | |  |
|  |  | |  | |  | B |
| * Solves operations involving fractions and index numbers. (Q3 parts 1 & 2) | * Solves index number problems involving multiplication and division (Q4c) | | * Expresses scientific notation with only one significant figure and represents standard form to correct decimal place (Q2, Q4) | |  |
|  |  | |  | | * Communication and justification of thinking and reasoning using appropriate mathematical language, representations and technologies. | C |
| * Solves simple operations with fractions. (Q1 parts 3 to 8) | * Solves index number problems involving two steps (Q4a,b) | |  | |  |
|  |  | | * Represents scientific notation with more than one significant figure (Q2) | |  | D |
|  |  | |  | | * No working shown and everyday language used. |
| * Solves equivalent fractions (Q1 parts 1 and 2) | * Solves simple index number problems involving adding and subtracting (Q1 Parts9 – 14) | |  | |  | E |
|  |  | |  | |  |