**Indices Rules - Basics**

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| Name : | Class : | Date : |

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| **1)** Write in index form      a) 5  $×$ 5  $×$ 5     b) 7  $×$ 5  $×$ 7  $×$ 5     c)  $\frac{7×7×7×7×7×7}{7×7}$ | [4]   |
|      d) 5  $×$ 3  $×$ 5  $×$ 3  $×$ 5 |  |
| **2)** Evaluate the following. Where appropriate, leave your answer as a fraction.      a)  $4^{6}$  $×$  $4^{-4}$     b)  $3^{-2}$  $×$  $3^{-5}$  $×$  $3^{6}$     c)  $4^{2}$  $÷$  $4^{5}$ | [5]   |
|      d)  $\frac{2^{4}}{2^{6}}$     e)  $(3^{-3})^{-1}$ |  |
| **3)** Evaluate        $55^{0}$ | [1]   |
| **4)** Simplify, giving your answer in index form      a)  $2^{5}$  $×$  $2^{-1}$     b)  $7^{-2}$  $×$  $7^{-5}$  $×$  $7^{0}$     c)  $(5^{2})^{-2}$ | [5]   |
|      d)  $2^{-6}$  $÷$  $2^{6}$     e)  $\frac{5^{0}}{5^{5}}$ |  |
| **5)** Simplify        $71^{0}$ | [1]   |
| **6)** Show the following as a power of 4        $64$ | [1]   |
| **7)** Show the following as a power of 9        $81^{-2}$ | [1]   |

**Solutions for the assessment Indices Rules - Basics**

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| **1)**  a)  $5^{3}$ |      b)  $7^{2}×5^{2}$ |
|      c)  $7^{4}$ |      d)  $5^{3}×3^{2}$ |
| **2)**  a)  $16$ |      b)  $\frac{1}{3}$ |
|      c)  $\frac{1}{64}$ |      d)  $\frac{1}{4}$ |
|      e)  $27$ | **3)** 1 |
| **4)**  a)  $2^{4}$ |      b)  $7^{-7}$ or  $\frac{1}{7^{7}}$ |
|      c)  $5^{-4}$ or  $\frac{1}{5^{4}}$ |      d)  $2^{-12}$ or  $\frac{1}{2^{12}}$ |
|      e)  $5^{-5}$ or  $\frac{1}{5^{5}}$ | **5)**  $1$ |
| **6)**  $4^{3}$ | **7)**  $9^{-4}$ |