**Indices Rules - Basics**

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| Name : | Class : | Date : |

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| **1)** Write in index form      a) 2  $×$ 2  $×$ 2  $×$ 2     b) 7  $×$ 2  $×$ 2     c)  $\frac{5×5×5×5×5×5}{5×5×5×5}$ | [4]   |
|      d) 5  $×$ 7  $×$ 5 |  |
| **2)** Evaluate the following. Where appropriate, leave your answer as a fraction.      a)  $10$  $×$  $10^{-2}$     b)  $5^{2}$  $×$  $5^{-3}$  $×$  $5^{3}$     c)  $3^{5}$  $÷$  $3^{2}$ | [5]   |
|      d)  $\frac{3^{-4}}{3^{-2}}$     e)  $(10^{-1})^{2}$ |  |
| **3)** Evaluate        $78^{0}$ | [1]   |
| **4)** Simplify, giving your answer in index form      a)  $7^{0}$  $×$  $7^{-2}$     b)  $7^{-2}$  $×$  $7^{5}$  $×$  $7^{-3}$     c)  $(3^{-2})^{4}$ | [5]   |
|      d)  $3^{4}$  $÷$  $3^{-4}$     e)  $\frac{5^{-6}}{5^{-3}}$ |  |
| **5)** Simplify        $88^{0}$ | [1]   |
| **6)** Show the following as a power of 5        $125$ | [1]   |
| **7)** Show the following as a power of 4        $16^{-1}$ | [1]   |

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

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| **1)**  a)  $2^{4}$ |      b)  $7×2^{2}$ |
|      c)  $5^{2}$ |      d)  $7×5^{2}$ |
| **2)**  a)  $\frac{1}{10}$ |      b)  $25$ |
|      c)  $27$ |      d)  $\frac{1}{9}$ |
|      e)  $\frac{1}{100}$ | **3)** 1 |
| **4)**  a)  $7^{-2}$ or  $\frac{1}{7^{2}}$ |      b)  $1$ or  $7^{0}$ |
|      c)  $3^{-8}$ or  $\frac{1}{3^{8}}$ |      d)  $3^{8}$ |
|      e)  $5^{-3}$ or  $\frac{1}{5^{3}}$ | **5)**  $1$ |
| **6)**  $5^{3}$ | **7)**  $4^{-2}$ |