

HOLIDAY HOMEWORK

Class: IGCSE-1

Subject: MATHEMATICS

1. Using indices, simplify the following:

a) $2 \times 2 \times 2 \times 5 \times 5$

b) $2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3$

2. Write the following out in full:

a) 4^3

b) 6^4

3. Work out the value of the following without using a calculator:

a) $2^3 \times 10^2$

b) $1^4 \times 3^3$

4. Simplify the following using indices:

a) $3^4 \times 3^3$

b) $6^3 \times 6^2 \times 3^4 \times 3^5$

c) $\frac{4^5}{2^3}$

d) $\frac{(6^2)^3}{6^5}$

e) $\frac{3^5 \times 4^2}{3^3 \times 4^0}$

f) $\frac{4^{-2} \times 2^6}{2^2}$

5. Without using a calculator, evaluate the following:

a) $2^4 \times 2^{-2}$

b) $\frac{3^5}{3^3}$

c) $\frac{5^{-5}}{5^{-6}}$

d) $\frac{2^5 \times 4^{-3}}{2^{-1}}$

6. Find the value of x in each of the following:

a) $2^{(x-2)} = 32$

b) $\frac{1}{4^x} = 16$

c) $5^{(-x+2)} = 125$

d) $8^{-x} = \frac{1}{2}$