GENMATHS RESOURCES

Task 1 – Use the prime factorisation of the following numbers to answer the questions below.

$A = 2^5 \times 3^2 \times 5^3$
$B = 2^3 \times 3 \times 5$
$C = 2 \times 3^3 \times 7^2$
$D = 2^4 \times 3^2 \times 5 \times 7$
$E = 2^3 \times 3 \times 5^2 \times 11$
$F = 3^3 \times 5 \times 7 \times 13$

1) Work out the HCF of A and B.

2) Work out the HCF of B and D.

3) Work out the HCF of D and E. Give your answer as a product of prime factors.

4) Work out the HCF of A and E.

5) Work out the HCF of B, C and D.

6) Work out the LCM of A and C. Give your answer as a product of prime factors.

7) Work out the LCM of B and F.

8) Work out the LCM of D and E.

9) Work out the LCM of A and E.

10) Work out the LCM of A, B and D. Give your answer as a product of prime factors.

Task 2

11) Let,
    $A = 2^6 \times 3^3 \times 7^2$
    $B = 2^3 \times 3^2 \times 11$
    a. Work out the HCF of A and B.
    b. Work out the LCM of A and B.

12) Given that
    $C = 3^2 \times 5 \times 7$
    $D = 3^3 \times 5^2 \times 7^2$
    a. Work out the HCF of C and D.
    b. Find the LCM of C and D, giving your answer in index form.

13) Given that
    $E = 2^4 \times 3^2 \times 5^3$
    $F = 2^3 \times 3 \times 7$
    a. Work out the HCF of E and F.
    b. Work out the LCM of E and F.

14) Let $G = 3 \times 5^2 \times 11^2$ and $H = 15 \times 11 \times 7^2$.
    a. Work out the HCF of G and H.
    b. Write the product $G \times H$ as a product of prime factors in simplest form.

15) Given $A = 2^4 \times 3^a \times 7^b$, write 35A as a product of prime factors, in terms of a and b.

16) Given $B = 2^x \times 3^y \times 5^2$, write 270B as a product of prime factors in terms of x and y.