www.m4ths.com – GCSE – Product of Prime Factors

(1) A factor of a number is_____

(2) A prime number is a number that_____

(3) The first 10 prime numbers are_____

(4) Draw a prime factor tree for the number 12.

(5) Express the following as a product of their prime factors:
(a) 8
(b) 10
(c) 15
(d) 16
(e) 25
(f) 36
(g) 26
(h) 17 (why is this easy?)
(i) 36 and as a result 72
(j) 120
(k) 81
(l) 500

Harder examples

(6) Using your answer for 120 write down the product of prime factors of:
(a) 240
(b) 120^2
(c) 1200

(7) Which number can be expressed by the following product of prime factors?
(a) $2^2 \times 7$
(b) $2^4 \times 3 \times 5$
(c) $2 \times 3^2 \times 7$

(8) Explain why each of the following product of prime factors examples are wrong:
(a) $18 = 2 \times 9$
(b) $64 = 2^3 \times 8$

(9) Find the HCF of 36 and 120 using the product of prime factors for each number.

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