Product of Primes

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Examples

Workout

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Question 1: Write each of these numbers as the product of their prime factors.

(a) 10 (b) 12 (c) 20 (d) 18 (e) 16 (f) 30 (g) 100

(h) 26 (i) 24 (j) 27 (k) 42 (l) 33 (m) 38 (n) 64

Question 2: Write each of these numbers as the product of their prime factors.
Give your answers in index form.

(a) 36 (b) 40 (c) 28 (d) 48 (e) 80 (f) 200 (g) 75

(h) 32 (i) 105 (j) 81 (k) 52 (l) 242 (m) 108 (n) 500

Question 3: Some numbers have been written as products of their prime factors.
Work out each number.

(a) 2×7 (b) $2 \times 3 \times 5$ (c) $2 \times 5 \times 11$ (d) $2 \times 2 \times 2 \times 3$

(e) $2^2 \times 5$ (f) 3×5^2 (g) $2^3 \times 3^2$ (h) $3^2 \times 11$

(i) 5^4 (j) $2^4 \times 5^2$ (k) $3^3 \times 13$ (l) 7×17^2

Question 4: Write each of these numbers as the product of their prime factors.

(a) 9000 (b) 235 (c) 392 (d) 715 (e) 444 (f) 792 (g) 5625

Apply

Question 1: Using the fact that $12 = 2^2 \times 3$, write each of the following as the product of prime factors in index form.

(a) 24 (b) 36 (c) 60 (d) 48 (e) 120 (f) 84

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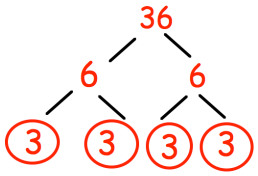
Question 2: Using the fact that $300 = 2^2 \times 3 \times 5^2$, write each of the following as the product of prime factors in index form.

(a) 600 (b) 150 (c) 900 (d) 3300 (e) 1500 (f) 2400

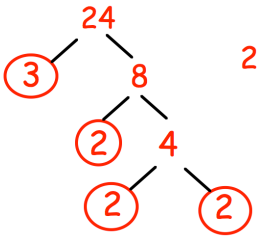
Question 3: Ashley has completed his homework.
Can you spot any mistakes?

Express 36 as a product of its prime factors.



36 = 3 x 3 x 3 x 3

Write 24 as the product of its prime factors.
Give your answer in index form.



24 = 2 x 2 x 2 x 3

Question 4: (a) Write 980 as a product of prime factors.
Express your answer in index form.

(b) Find the lowest number by which 980 would need to be multiplied by to give a square number.

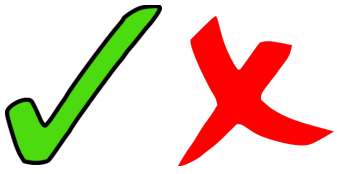
Question 5: (a) Write 480 as a product of prime factors.
Express your answer in index form.

(b) Find the lowest number by which 480 would need to be multiplied by to give a square number.

Question 6: (a) Write 2646 as a product of prime factors.
Express your answer in index form.

(b) Find the lowest number by which 2646 would need to be multiplied by to give a cube number.

Answers



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