



## Prime Factorization - Is Number a Multiple of Both - From Variables as Factors

**1**  $b = 3 \cdot 5 \cdot 7^3$

Is  $b$  a multiple of both 735 and 1029?

$$735 = 3 \cdot 5 \cdot 7^2$$

$$1029 = 3 \cdot 7^3$$

is  $b$  a multiple of 735 and 1029?

A	B
Yes	No

**2**  $z = 2^2 \cdot 3 \cdot 7^2$

Is  $z$  a multiple of both 84 and 294?

$$84 = 2^2 \cdot 3 \cdot 7$$

$$294 = 2 \cdot 3 \cdot 7^2$$

is  $z$  a multiple of 84 and 294?

A	B
Yes	No

**3**  $n = 2^3 \cdot 5 \cdot 7$

Is  $n$  a multiple of both 140 and 40?

$$140 = 2^2 \cdot 5 \cdot 7$$

$$40 = 2^3 \cdot 5$$

is  $n$  a multiple of 140 and 40?

A	B
Yes	No

**4**  $n = 2^2 \cdot 5^3$

Is  $n$  a multiple of both 60 and 250?

$$60 = 2^2 \cdot 3 \cdot 5$$

$$250 = 2 \cdot 5^3$$

is  $n$  a multiple of 60 and 250?

A	B
Yes	No

**5**  $x = 3^3 \cdot 5 \cdot 7$

Is  $x$  a multiple of both 459 and 315?

$$459 = 3^3 \cdot 17$$

$$315 = 3^2 \cdot 5 \cdot 7$$

is  $x$  a multiple of 459 and 315?

A	B
Yes	No

**6**  $p = 2 \cdot 3^3 \cdot 7$

Is  $p$  a multiple of both 90 and 126?

$$90 = 2 \cdot 3^2 \cdot 5$$

$$126 = 2 \cdot 3^2 \cdot 7$$

is  $p$  a multiple of 90 and 126?

A	B
Yes	No

**7**  $z = 3 \cdot 5^2 \cdot 7^2$

Is  $z$  a multiple of both 1225 and 735?

$$1225 = 5^2 \cdot 7^2$$

$$735 = 3 \cdot 5 \cdot 7^2$$

is  $z$  a multiple of 1225 and 735?

A	B
Yes	No

**8**  $z = 2 \cdot 3 \cdot 5^2 \cdot 7$

Is  $z$  a multiple of both 330 and 150?

$$330 = 2 \cdot 3 \cdot 5 \cdot 11$$

$$150 = 2 \cdot 3 \cdot 5^2$$

is  $z$  a multiple of 330 and 150?

A	B
Yes	No