

Exercises – Prime Factorization, GCF, and LCM

1

$$42x^2y^2 + 63xy^3$$

Which of the following is equivalent to the expression shown above?

- A) $21x^2y^2(2x + 3y)$
- B) $21xy^2(2x + 3y)$
- C) $21x^2y(2x + 3y)$
- D) $21xy(2x + 3y)$

2

$$12x^2y - 18xy^2z$$

Which of the following is equivalent to the expression shown above?

- A) $6xy(2x - 3yz)$
- B) $6x^2y(2x - 3yz)$
- C) $6xy^2(2x - 3yz)$
- D) $6x^2y^2(2x - 3yz)$

3

$$5a^2b - 10abc + 5bc^2$$

Which of the following is equivalent to the expression shown above?

- A) $5b(a - b)^2$
- B) $5c(a - b)^2$
- C) $5a(b - c)^2$
- D) $5b(a - c)^2$

4

If x and y are positive integers and $12^3 = 2^x \cdot 3^y$, what is the value of $x + y$?

5

If $2 \times 5^9 - k \times 5^8 = 2 \times 5^8$, what is the value of k ?

6

If $12^{99} - 12^{97} = 12^{97} \times n$, what is the value of n ?