

5.10

Least Common Multiple of Two Monomials

• Example 1

Find the least common multiple of the two expressions and simplify.

$$12x^2yz^4 \text{ and } 18x^5y^3$$

We first rewrite each expression to show the prime factors of 12 and 18.

$$12x^2yz^4 = 2^2 \cdot 3 \cdot x^2 \cdot y \cdot z^4; 18x^5y^3 = 2 \cdot 3^2 \cdot x^5 \cdot y^3$$

We then select the greatest power for each of the factors 2, 3, x , y , and z . We get

$$2^2, 3^2, x^5, y^3, z^4$$

The product of these terms is the least common multiple of the two expressions.

$$2^2 \cdot 3^2 \cdot x^5 \cdot y^3 \cdot z^4 = 36x^5y^3z^4$$

● ● ● CHECK YOURSELF 1

Find the least common multiple of $2x^5y^4$ and $8x^{12}y^{16}z$.

● ● ● CHECK YOURSELF ANSWER

1. $8x^{12}y^{16}z$.

5.10 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

Find the least common multiple of the following monomials.

1. $9x^3y^2$ and $15xy^4z$

2. $2a^3b^2$ and $18ab^2c^5$

3. $27x^4z^2$ and $18y^{10}z^6x^8$

4. $11s^5t^5u$ and $7st^5u^4$

5. $12x^2yz^2$ and $16xy^2z$

6. $15x^2y$ and $4x^3z^2$

7. $3x^2z^4$ and $21y^3z$

8. $6a^2b$ and $7ab^2c^3$