

## 8.EE.A.1 Simplify Expressions Involving Multiplication of Exponents

8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.

1 The expression  $2^3 \cdot 4^2$  is equivalent to

- 1)  $2^7$
- 2)  $2^{12}$
- 3)  $8^5$
- 4)  $8^6$

2 Which expression is equivalent to  $3^3 \cdot 3^4$ ?

- 1)  $9^{12}$
- 2)  $9^7$
- 3)  $3^{12}$
- 4)  $3^7$

3 The expression  $3^2 \cdot 3^3 \cdot 3^4$  is equivalent to

- 1)  $27^9$
- 2)  $27^{24}$
- 3)  $3^9$
- 4)  $3^{24}$

4 The product of  $3x^5$  and  $2x^4$  is

- 1)  $5x^9$
- 2)  $5x^{20}$
- 3)  $6x^9$
- 4)  $6x^{20}$

5 The product of  $2x^3$  and  $6x^5$  is

- 1)  $10x^8$
- 2)  $12x^8$
- 3)  $10x^{15}$
- 4)  $12x^{15}$

6 Which expression represents  $(3x^2y^4)(4xy^2)$  in simplest form?

- 1)  $12x^2y^8$
- 2)  $12x^2y^6$
- 3)  $12x^3y^8$
- 4)  $12x^3y^6$

7 The product of  $4x^2y$  and  $2xy^3$  is

- 1)  $8x^2y^3$
- 2)  $8x^3y^3$
- 3)  $8x^3y^4$
- 4)  $8x^2y^4$

8 The product of  $6x^3y^3$  and  $2x^2y$  is

- 1)  $3xy^2$
- 2)  $8x^5y^4$
- 3)  $12x^5y^4$
- 4)  $12x^6y^3$

9 The expression  $(x^2z^3)(xy^2z)$  is equivalent to

- 1)  $x^2y^2z^3$
- 2)  $x^3y^2z^4$
- 3)  $x^3y^3z^4$
- 4)  $x^4y^2z^5$

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10 The product of  $3x^2y$  and  $-4xy^3$  is

- 1)  $-12x^3y^4$
- 2)  $12x^3y^4$
- 3)  $-12x^2y^3$
- 4)  $12x^2y^3$

14 What is the product of  $\frac{1}{3}x^2y$  and  $\frac{1}{6}xy^3$ ?

- 1)  $\frac{1}{2}x^2y^3$
- 2)  $\frac{1}{9}x^3y^4$
- 3)  $\frac{1}{18}x^2y^3$
- 4)  $\frac{1}{18}x^3y^4$

11 What is the product of  $10x^4y^2$  and  $3xy^3$ ?

- 1)  $30x^4y^5$
- 2)  $30x^4y^6$
- 3)  $30x^5y^5$
- 4)  $30x^5y^6$

15 The product of  $6x^a$  and  $x$  is

- 1)  $6x^a$
- 2)  $6x^{a+1}$
- 3)  $6x^{a^2}$
- 4)  $6x^{2a}$

12 What is the product of  $3a^2b$  and  $-2ab^3$ ?

- 1)  $a^2b^3$
- 2)  $a^3b^4$
- 3)  $-6a^2b^3$
- 4)  $-6a^3b^4$

16 If  $x = 5^a$ , then the value of  $5x$  is

- 1)  $x + 1$
- 2)  $6^a$
- 3)  $a + 5$
- 4)  $5^{a+1}$

13 The expression  $(-2a^2b^3)(4ab^5)(6a^3b^2)$  is equivalent to

- 1)  $8a^6b^{10}$
- 2)  $48a^5b^{10}$
- 3)  $-48a^6b^{10}$
- 4)  $-48a^5b^{10}$

**8.EE.A.1 Simplify Expressions Involving Multiplication of Exponents****Answer Key**

8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.

1 ANS: 1

$$2^3 \cdot 4^2 = 2^3 \cdot (2^2)^2 = 2^3 \cdot 2^4 = 2^7$$

2 ANS: 4

3 ANS: 3

4 ANS: 3

5 ANS: 2

6 ANS: 4

7 ANS: 3

8 ANS: 3

9 ANS: 2

10 ANS: 1

11 ANS: 3

12 ANS: 4

13 ANS: 3

14 ANS: 4

15 ANS: 2

16 ANS: 4