Grade 8 Practice 8.EE.A.1: Multiplication of Powers

1. Simplify \( x^2 \cdot 4x^3 \cdot y^4 \cdot 4y^2 \).
   - [A] 16\( x^5y^6 \)
   - [B] 8\( x^6y^6 \)
   - [C] 8\( x^5y^8 \)
   - [D] 1024\( x^6y^8 \)
   - [E] 16\( x^6y^6 \)

2. Simplify: \((2xy^2)(5x^4y^4)\)
   - [A] 10\( x^4y^8 \)
   - [B] 7\( x^5y^6 \)
   - [C] 10\( x^5y^6 \)
   - [D] 7\( xy^4 \)

3. Simplify: \((7xy^2)(9xy^4)\)
   - [A] 16\( xy^4 \)
   - [B] 63\( x^2y^6 \)
   - [C] 63\( xy^8 \)
   - [D] 16\( x^2y^6 \)

4. Simplify: \((-9x^3y^4)(-6x^3y^2)\)
   - [A] -15\( x^6y^6 \)
   - [B] 54\( x^9y^8 \)
   - [C] -15\( x^3y^2 \)
   - [D] 54\( x^6y^6 \)

5. Simplify: \((3x^3y)(-4xy^2)\)
   - [A] -\( x^4y^3 \)
   - [B] -12\( x^4y^3 \)
   - [C] -12\( x^3y^2 \)
   - [D] -\( x^3y^2 \)

6. Simplify: \((-6x^2y^4)(-8x^2y)\)
   - [A] 48\( x^4y^4 \)
   - [B] -14\( x^4y^5 \)
   - [C] 48\( x^4y^5 \)
   - [D] -14\( x^2y \)

7. Simplify: \((-5x^4y^3)(2x^3y^3)\)
   - [A] -3\( x^7y^6 \)
   - [B] -10\( x^7y^6 \)
   - [C] -3\( x^7y^6 \)
   - [D] -10\( x^{12}y^9 \)

8. Show two ways to use a calculator to find the value of \( 6^2 \cdot 6^3 \).

9. Write \( 2x^9 \) as the product of two powers with the same base.

10. Write \( 8x^8 \) as the product of two powers with the same base.
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[1] A
[2] C
[3] B
[4] D
[5] B
[6] C
[7] B

\[ 6^2 \times 6^3 \]

[8] \[ 6^{(2 + 3)} \]

[9] Answers may vary. Sample: \( x^2 \cdot x^7 \)

[10] Answers may vary. Sample: \( x^4 \cdot 4x^4 \)