

Reteaching 4-7 Exponents and Multiplication

Simplify $m^3 \cdot m^4$ and $(n^2)^3$.

The base of m^3 is m and the base of m^4 is m . So, they have the same base. To multiply variables with the same base, add the exponents.

$$m^3 \cdot m^4 = m^{3+4} = m^7$$

This rule works because you are combining 3 factors of m and 4 factors of m .

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

Simplifying $(n^2)^3$ involves raising a power (n^2) to a power. To find a power of a power, multiply the exponents.

$$(n^2)^3 = n^{2 \cdot 3} = n^6$$

This rule works because you are using n^2 as a factor 3 times.

$$(n^2)^3 = n^2 \cdot n^2 \cdot n^2 = (n \cdot n) \cdot (n \cdot n) \cdot (n \cdot n) = n^6$$

Simplify each expression. ~~Show an intermediate step.~~

1. $4^7 \cdot 4^2 = (\underline{\hspace{2cm}}) \cdot (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}}$

2. $a^3 \cdot a^6 = (\underline{\hspace{2cm}}) \cdot (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}}$

3. $3x^2 \cdot 4x^5 = (\underline{\hspace{2cm}}) \cdot (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}}$

4. $3^4 \cdot 3^3 = (\underline{\hspace{2cm}}) \cdot (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}}$

5. $y^5 \cdot y^3 = (\underline{\hspace{2cm}}) \cdot (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}}$

6. $7r^4 \cdot 3r^2 = (\underline{\hspace{2cm}}) \cdot (\underline{\hspace{2cm}}) = \underline{\hspace{2cm}}$

7. $(5^3)^4 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

8. $(h^2)^5 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

9. $(m^4)^8 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

10. $(x^3y^2)^3 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

11. $(2s^4t^5)^4 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

12. $(-pqr^2)^3 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

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