



8-1 Product of Powers

I can multiply values being raised to powers.

Notes

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- Exponent - the superscript number that tells how many times to use the base as a factor

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- Factor - a number or variable being multiplied.
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- Product of powers property - when multiplying like bases, keep the base and add the exponents.
- Power of powers property - when raising a

how many times to use the base as a factor.

- Factor - a number or variable being multiplied.
- Power - a synonym for exponent.
- Product of powers property - when multiplying like bases, keep the base and add the exponents.
- Power of powers property - when raising a power to a power, keep the base and multiply the exponents.

1. $2^3 * 2^4 = 2^{3+4} = 2^7$

$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^7$

$$2. x^4 * x^1 = x^{4+1} = x^5$$

$$3. 6^3 * 6 = 6^{3+1} = 6^4$$

$$4. 2x^3 * 4x^2 = 8x^{3+2} = 8x^5$$

$$2 \cdot x \cdot x \cdot x \cdot 4 \cdot x \cdot x$$

$$2 \cdot 4 \cdot \underbrace{x \cdot x \cdot x \cdot x \cdot x}$$

$$8x^5$$

5. $3m^3n^4 * 2m^2n * mnp^3 = 6m^{3+2+1}n^{4+1+1}p^3$
 $6m^6n^6p^3$

6. $(3^4)^3$

6. $(3^4)^3 = 3^{4 \cdot 3} = 3^{12}$
 $3^4 \cdot 3^4 \cdot 3^4 = 3^{4+4+4} = 3^{12}$

$$7. (m^5)^3 = m^{5 \cdot 3} = m^{15}$$



Assignment: do the 8-1 worksheet

