Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table# \_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_

**10.2A NOTES – Product of Powers Property**

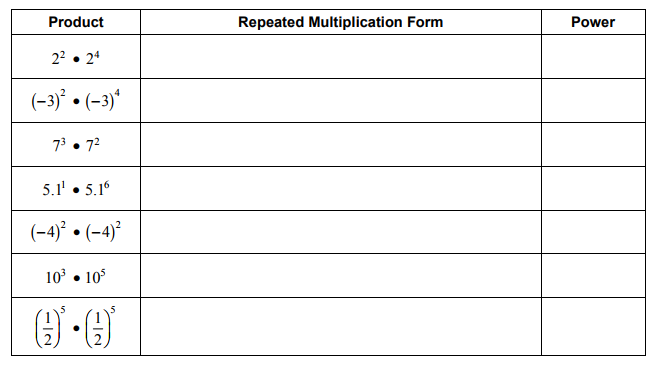
Objective: CCSS.8.EE.1 (MP8 Look for and Express Regularity in Repeated Reasoning)

Complete an exit slip at the end

**Prime Number:** a whole number greater than 1 whose only factors are 1 and itself. Ex: 2, 3, 5, 7, 11, 13…

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| **WARM-UP**  EXAMPLE: Write the prime factorizationWrite the prime factorization of 675  of 648 using exponents using exponents  648  2 ^ 324  2 ^ 162  2 ^ 81  9 ^ 9  3 ^ 3 3 ^ 3  PRIME FACTORIZATION: 23 ∙ 34 PRIME FACTORIZATION: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

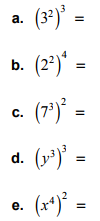
1. Write the expression as a single power. Then write a *general rule* for finding **a product of power**.



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| **RULE**  am ∙ an =  Describe the pattern in the table. |

**BACK 🡪**

1. Write the expression as a single power. Then write a *general rule* for finding **a power of a power**.

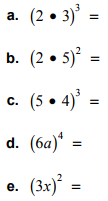


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| **RULE**  (am)n =  Describe the pattern |

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

How can you rewrite 2 as an exponential form? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write the expression as the product of two powers. Then write a *general rule* for finding **a power of a product.**



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| **RULE**  (∙)m =  Describe the pattern. |

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table# \_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_

**10.2A Product of Power Property EXIT SLIP**

Two students were given the following problem: Simplify m4 ∙ m5

Brenda thought the answer was m9. Matthew thought the answer was m20. Which student is correct? How do you know?

**CLAIM** (Which student is correct?): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is correct.

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| --- | --- |
| **EVIDENCE** (show your work to support your claim; label as needed): | **REASONING** (Summarize in two to three sentences how you know you are correct.) |

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table# \_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_

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|  |  |
| --- | --- |
| **EVIDENCE** (show your work to support your claim; label as needed): | **REASONING** (Summarize in two to three sentences how you know you are correct.) |