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 ^ 3PRIME 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**($a^{p}$∙$b^{n}$)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 \_\_\_\_\_\_\_\_\_

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

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

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