**UUInvestigation: Exponent Rules**

Complete the following table, using what you know about exponents and the example provided.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Question | Repeated Multiplication | Answer in Exponential Form | Exponent of Answer | Exponents in Original Question |
| Multiplication Rule |
|  | 2x2x2x**2x2x2x2x2** |  | 8 | 3, 5 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Compare the exponents in the answer and in the original question.To multiply powers, you \_\_\_\_\_\_\_\_\_\_\_\_\_ the exponents, if the base is the same. |
| Division Rule |
|  |  |  | 2 | 5, 3 |
|  |  |  |  |  |
|  |  |  |  |  |
| Compare the exponents in the answer and in the original question.To divide powers, you \_\_\_\_\_\_\_\_\_\_\_\_\_ the exponents, if the base is the same. |

**UULesson: Multiplication and Division Exponent Rules**

|  |  |  |  |
| --- | --- | --- | --- |
| Example 1: 22 x 25 | Example 2:’ | Example 3: | Example 4: |

**UUInvestigation: Exponent Rule III**

Complete the following table, using what you know about exponents, the multiplication rule, and the example provided.

|  |
| --- |
| Power of a Power Rule |
|  |  | (from multiplication rule) | 12 | 3, 4 |
|  |  |  |  |  |
|  |  |  |  |  |
| Compare the exponents in the answer and in the original question.To raise a power to a power, you \_\_\_\_\_\_\_\_\_\_\_\_\_ the exponents, if the base is the same. |

**UULesson: Power of a Power Exponent Rule**

|  |  |
| --- | --- |
| Example 1: | Example 2: |
| Example 3: | Example 4: |

**UUPractice: Exponent Rules**

Simplify, but do not evaluate

|  |  |  |  |
| --- | --- | --- | --- |
| a.  | b.  | c.  | d.  |
| e.  | f.  | g.  | h.  |
| i.  | j.  | k.  | l.  |
| **Find the missing exponent:** |
| m.  |  n.  | o.  | p.  |
| ANSWERS: a) 89, b) y8, c) (-6)6, d) 28x43, e)59, f) 82, g) (3/2)7, h) 2x32, i) 56, j) a6b2, k) a2b4, l) m4n2 , m) x = 4, n) x = 5, o) x = 4, p) x = 7 |