**Guided Notes- Chapter 4: Variables and Ratios Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**In this chapter I CAN:**

* Apply variables to generalize and to represent unknown quantities
* Write multiple expressions to describe a pattern and recognize whether the expressions are equivalent
* Find the value of an algebraic expression when the value of the variable is known
* Enlarge and reduce figures while maintaining their shapes
* Use ratios to describe relationships between similar shapes

**4.1.1 What if I do not know a length?**

**Introduction to Variables**

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| ***4-1***  |
|  |
| **b.** |
| **c.** |
| **d.** |

|  |
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| ***4-2*** |
| **a.** |
| **b.** |
| **c.** |

|  |
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| ***4-3***  |
| **a.** | **b.** |
| **c.** |

|  |
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| ***4-4***  |
| **a.** | **b.** |

**4.1.2 How many ways can I represent it?**

**Writing Equivalent Expressions**

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| ***4-12***  |
| **a.** |
| **b.** |
| **c.** |
| **d.** |

|  |
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| ***4-13***  |
| **Jona’s Method:****Curran’s Method:****Tina’s Method****Raymond’s Method:****Alyssa’s Method****TJ’s Method** |

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| ***4-14*** |
| 1.
 |
| **b.** |

|  |
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|  |
| ***4-15*** |
|  |

**4.1.3 How can I describe any figure?**

**Using Variables to Generalize**

|  |
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| ***4-21***  |
| **a.** |
| **b.**  |

|  |
| --- |
| ***4-22 Generalizing*** |
|  |
| ***4-23*** |
|  |
| ***4-24*** |
|  |

|  |
| --- |
| ***4-25*** |
| **a.** |
| **b.** |
| **c.** |
| **d.** |

|  |
| --- |
| ***4-26*** |
| 1.
 |  |
| 1.
 |
|  |
| 1.
 |
| ***4-27*** |
|  |
| ***4-28*** |
|  |
|  ***4-29*** |
| **a.** | 1.
 |
| 1.
 | 1.
 |
| ***4-30*** |
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**4.2.1 How can I enlarge a shape?**

**Enlarging Two-Dimensional Shapes**

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| ***4-44*** |
|  |
| ***4-45***  |
| 1.
 |
| 1.
 |
| 1.
 |
| 1.
 |
| ***4-46*** |
|  |

**4.2.2 How does it change?**

**Enlarging and Reducing Figures**

|  |
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| ***4-52 The Broken Copier*** |
|  |

|  |
| --- |
| ***4-53***  |
| **a.** |
| **b.*****i.*** | ***ii.*** |
| **c.** |
| ***4-54*** |
| **a.** | **b.** |
| **4-55** |
| **a.****Shape:** | **b.****Length of each side?** |
| **c.****What are the coordinates of the corners?****What are the lengths of the sides?** | **d.****What are the coordinates of the vertices?****What are the side lengths?** |

**4.2.3 How can I compare them?**

**Enlargement and Reduction Ratios**

|  |
| --- |
| ***4-63*** |
| **a.** |
| **b.*****i.*** | ***ii.*** | ***iii.*** |
| **c.**  |
| ***4-64*** |
| **a.** |
| **b.** |
| **4-65** |
|  |
| ***4-66*** |
|  |

**4.2.4 How Can I use ratios?**

**Ratios and Other Situations**

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| ***4-75*** |
| **a.** |
| **b.** |
| **c.**  |
| ***4-76*** |
| **a.** |
| **b.** |
| **c.** |
| **4-77** |
| **a.*****i.)*** | ***ii*.)** | ***iii.)*** |
| **b.** |
| **c.** |
| ***4-78*** |
| **a.** | **b.** |