**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.** |

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

|  |  |
| --- | --- |
| ***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*** |
|  |
| **b.** |

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|  |
| ***4-15*** |
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**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*** |
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| ***4-24*** |
|  |

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

|  |  |
| --- | --- |
| ***4-26*** | |
|  |  |
|  | |
|  | |
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| ***4-27*** | |
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| ***4-28*** | |
|  | |
| ***4-29*** | |
| **a.** |  |
|  |  |
| ***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*** |
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| ***4-45*** |
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| ***4-46*** |
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**4.2.2 How does it change?**

**Enlarging and Reducing Figures**

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

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