Patterns and Variable Study Guide for Quiz 1

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| Lesson 1: Number Patterns and Pattern Rules1. Fill in the missing terms in the patterns.a) 3, 6, 9, 12, 15, \_\_\_\_, \_\_\_\_, \_\_\_\_...b) 50, 48, 46, 44, 42, \_\_\_, \_\_\_\_, \_\_\_\_...2. What is the 10th term of this pattern? Start at 5. Alternately take away 4, then add 6.3. Find each missing term. Describe the pattern.a) 2, 4, 3, 5, 4, \_\_, 5, 7…b) 2, 102, 202, 302, \_\_\_\_, 502…4. Write two patterns that start: 3, 6,…For each pattern, list the first 7 terms and write the pattern rule.Show your work.5. What is the 6th term in this pattern?Start at 22. Alternately subtract 3 and add 1.Show your work. |

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| Lesson 2: Using Patterns to Solve Problems1. Continue the pattern.

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| **Object** | **Number of Containers** |
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |
| 4 | 16 |
| 5 | 20 |
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2. Joe earns $5.25 for each hour he works at the movie store. He wants to buy a new game that will cost about $45. How many hours will Joe need to work in order to buy the new game?  Make a table to record the pattern. Solve the problem. |

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| Lesson 3: Using a Variable to Describe a Pattern1. Write an equation for the pattern,  45, 46, 47, 48, 49, 50, … \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Find the 15th term \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Find the 38th term \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2. Write an equation for the pattern,  881, 882, 883, 884, 885, 886, … \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Find the 20th term \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Find the 92nd term \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| Lesson 5: Using a Variable to Write an Equation1. Which of the following statements are equations? How do you know?a) 8 + 2 b) 10 – 3 = *n* c) 199 + *y* d) 14 = 28 – *r* Write two equations for each of the following questions.2. Faris shared his box of strawberries with 5 friends. They each received 15 strawberries. How many were in Faris’s box originally?3. Fatima shared 63 pencils among a group of 9 students. How many pencils did each student receive? |