Patterns and Variable Study Guide for Quiz 1

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| Lesson 1: Number Patterns and Pattern Rules 1. 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 Problems 1. Continue the pattern.   |  |  | | --- | --- | | **Object** | **Number of Containers** | | 1 | 4 | | 2 | 8 | | 3 | 12 | | 4 | 16 | | 5 | 20 | |  |  | |  |  | |  |  |   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 Pattern 1. 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 Equation 1. 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? |