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| **Race Training- 6.EE.7** | |
| **Domain** | **Expressions and Equations** |
| **Cluster** | **Reason about and solve one-variable equations and inequalities.** |
| **Standard(s)** | **6.EE.7** Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.  **6.EE.5** Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. **6.EE.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. |
| **Materials** | Activity sheet |
| **Task** | **Race Training**  Lottie, Lonnie, and Cathy are all training for a race. Lottie’s and Lonnie ran the same distance. Also, Cathy four miles less than Lottie and Lonnie’s combined distance.  Part 1:  Write an equation for the number of miles run by Cathy (*C*) in terms of Lottie (*L*) and Lonnie (*O*).  Part 2:  How far did Lottie and Lonnie each run if Cathy ran 1 mile? 2 miles? 3 miles? 4 miles?  Part 3:  If Cathy ran a whole number of miles last week that was greater than 9 miles but less than 13 miles, how far did Lottie and Lonnie each run?  Part 4: Write an explanation about how you solved Part 3. |

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| **Rubric** | | |
| **Level I** | 1. **Level II** | **Level III** |
| Developing Proficiency   * Student uses inappropriate solution strategy and does not get the correct answer. | Not Yet Proficient   * There are one or two errors. | Proficient in Performance   * Accurately solves problem. * Part 1: Equation: *C* = *L* + *O* – 4. * Part 2: Cathy = 1, Lottie (*L*) and Lonnie (*O*) both ran 2 ½ miles; *C* = 2, *L* and *O* both ran 3 miles; *C* = 3; *L* and *O* both ran 3 ½ miles; *C* = 4 miles, *L* and *O* both ran 4 miles. * Part 3: C = 10; L and O = 7; C = 11; L and O = 7 ½; C =12, L and O = 8. * Part 4: The explanation is clear and accurate. |

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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| 3. Constructs viable arguments and critiques the reasoning of others. |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| **6. Attends to precision.** |
| 7. Looks for and makes use of structure. |
| 8. Looks for and expresses regularity in repeated reasoning. |

**Race Training**

Lottie, Lonnie, and Cathy are all training for a race. Lottie’s and Lonnie ran the same distance. Also, Cathy four miles less than Lottie and Lonnie’s combined distance.

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Part 2:

How far did Lottie and Lonnie each run if Cathy ran 1 mile? 2 miles? 3 miles? 4 miles?

Part 3:

If Cathy ran a whole number of miles last week that was greater than 9 miles but less than 13 miles, how far did Lottie and Lonnie each run?

Part 4:  
Write an explanation about how you solved Part 3.