Lesson 21: If-Then Moves with Integer Number Cards

Classwork

**Exploratory Challenge: Integer Game Revisited**

Let’s investigate what happens if a card is added or removed from a hand of integers.

My cards:

My score:

**Event 1**

My new score:

Conclusion:

**Event 2**

My new score:

Conclusion:

**Event 3**

My new score:

Expression:

Conclusion:

**Event 4**

Expression:

Conclusion:

Exercises

1. The table below shows two hands from the Integer Game and a series of changes that occurred to each hand. Part of the table is completed for you. Complete the remaining part of the table, then summarize the results.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Hand  | Result | Hand  | Result |
| Original |  |  |  |  |
| Add  |  |  |  |  |
| Subtract  |  |  |  |  |
| Multiply by  |  |  |  |  |
| Divide by  |  |  |  |  |

1. Complete the table below using the multiplication property of equality.

|  |  |  |
| --- | --- | --- |
|  | Original expression and result | Equivalent expression and result |
|  |   |  |
| Multiply both expressions by  |  |  |
| Write a conclusion using if-then |  |

Lesson Summary

* If a number sentence is true, , and you add or subtract the same number from both sides of the equation, then the resulting number sentence will be true.
* If a number sentence is true, , and you multiply both sides of the equation by the same number, then the resulting number sentence will be true.
* If a number sentence is true, , and you divide both sides of the equation by the same non-zero number, then the resulting number sentence will be true.

Problem Set

1. Evaluate the following numerical expressions

|  |  |
| --- | --- |
|  |  |
| 1.
 |  |
| 1.
 |  |

1. Which expressions from Exercise 1 are equal?
2. If is divided to two of the equivalent expressions from Exercise 1, write an if-then statement using the properties of equality.
3. Write an if-then statement if is multiplied to the following equation: .

|  |  |  |
| --- | --- | --- |
|  | Simplify the expression. |  |
|  | Using the expression, write an equation. |  |
|  | Rewrite the equation if is added to both expressions. |  |
|  | Write an if-then statement using the properties of equality. |  |