

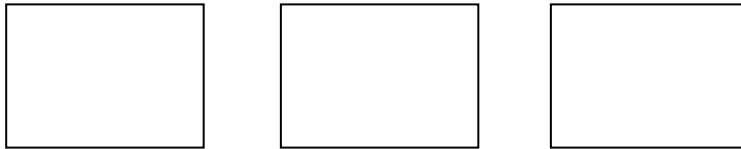
Lesson 21: If-Then Moves with Integer Number Cards

Classwork

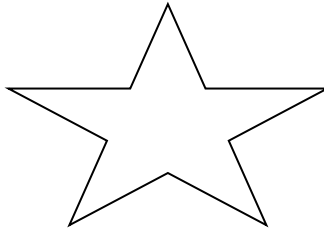
Exploratory Challenge: Integer Game Revisited

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

My cards:



My score:



Event 1

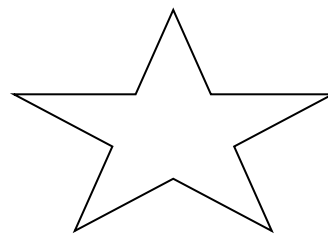
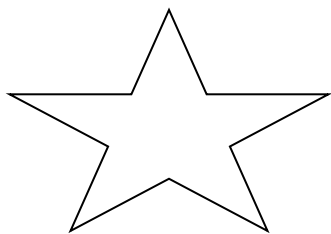
My new score:



Conclusion:

Event 2

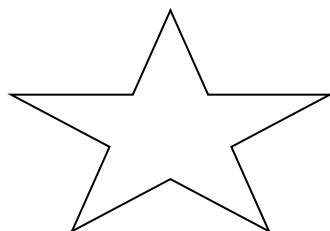
My new score:



Conclusion:

Event 3

My new score:



Expression:

Conclusion:

Event 4

Expression:

Conclusion:

Exercises

- 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 1	Result	Hand 2	Result
Original	$1 + (-4) + 2$		$0 + 5 + (-6)$	
Add 4	$1 + (-4) + 2 + 4$			
Subtract 1	$1 + (-4) + 2 + 4 - 1$			
Multiply by 3				
Divide by 2				

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

	Original expression and result	Equivalent expression and result
	$3 + (-5) =$	
Multiply both expressions by -3		
Write a conclusion using if-then		

Lesson Summary

- If a number sentence is true, and the same number is added to both sides of the equation, then the resulting number sentence is true. (*addition property of equality*)
- If a number sentence is true, and the same number is subtracted from both sides of the equation, then the resulting number sentence is true. (*subtraction property of equality*)
- If a number sentence is true, and both sides of the equation are multiplied by the same number, then the resulting number sentence is true. (*multiplication property of equality*)
- If a number sentence is true, and both sides of the equation are divided by the same nonzero number, then the resulting number sentence is true. (*division property of equality*)

Problem Set

1. Evaluate the following numerical expressions.

a. $2 + (-3) + 7$

b. $-4 - 1$

c. $-\frac{5}{2} \times 2$

d. $-10 \div 2 + 3$

e. $\left(\frac{1}{2}\right)(8) + 2$

f. $3 + (-4) - 1$

2. Which expressions from Exercise 1 are equal?

3. If two of the equivalent expressions from Exercise 1 are divided by 3, write an if-then statement using the properties of equality.

4. Write an if-then statement if -3 is multiplied to the following equation: $-1 - 3 = -4$.

5. Simplify the expression.

$$5 + 6 - 5 + 4 + 7 - 3 + 6 - 3$$

Using the expression, write an equation.

Rewrite the equation if 5 is added to both expressions.

Write an if-then statement using the properties of equality.