7 - CHAPTER 3: INTEGERS - NOTE SHEET

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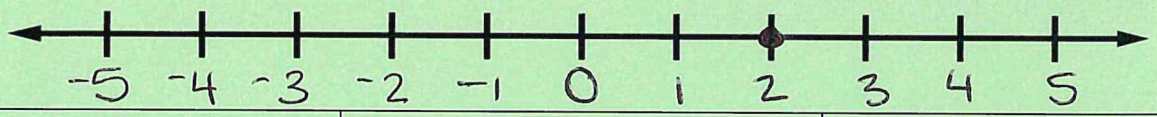
Lesson 3.1: Integers and Absolute Value

Vocabulary	
Term	Definition
Integer	The numbers on a number line $\{\ldots, -4, -3, -2, -1, 0, 1, 2, 3, 4, \ldots\}$
Graphing Integers	
Negative Number: integers less than zero (-)	Zero: neither negativie nor positive
Positive Number: integers more than zero	
Opposite Numbers	a number on the opposite side of the number line (or opposite sign)
Absolute Value	$\lvert a \rvert$ The distance a number is from zero

Lesson 3.2: Adding Integers

Vocabulary	
Term	Definition
Additive Inverses	The opposite of a number. $12 \rightarrow -12$
Additive Inverse Property	When a number and its additive inverse are added it equals zero. $12 + (-12) = 0$ $-3 + 3 = 0$

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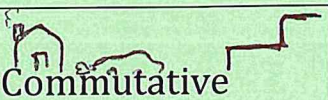
Key Concepts	
To <u>add integers with the same sign</u>, add their absolute values The sum is: • positive if both numbers are positive • negative if both numbers are negative.	
To <u>add integers with different signs</u>, Subtract their absolute values The sum is: • positive if the number with the greater absolute value is ~~bigger~~ positive $17 + (-3) = 14$ • negative if the number with the greater absolute value is negative $-17 + 3 = -14$	
 Commutative Property	Being able to rearrange an addition/multiplication problem and get the same answer $7+2=9=2+7$
Associative Property	Being able to regroup an addition/multiplication problem to get the same answer $7+(2+3)=12=(7+2)+3$ ~~order~~ ~~an~~
Addition Identity Property	If you add zero to any number you get that number. $7+0=7$

<u>Lesson 3.3: Subtracting Integers</u>

Key Concepts
To <u>subtract an integer</u>, add its additive inverse (opposite)

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Lesson 3.4: Multiplying Integers

Key Concepts	
Multiplying Two Integers with Different Signs: The answer is negative $-\cdot+=-$ $+\cdot-=-$	
Multiplying Two Integers with the Same Sign: The answer is positive $+\cdot+=+$ $-\cdot-=+$	
Even Number of Negatives: positive	Odd Number of Negatives: Negative

Lesson 3.5: Dividing Integers

Key Concepts
Divide Integers with Different Signs: $-\div+=-$ $+\div-=-$ the answer is negative $\frac{-p}{q}$
Divide Integers with the Same Signs: the answer is positive