9-10-19

Aim: SWBAT add and subtract integers.

HW: Packet Page 12

Quiz Monday (Packet Pages 1 – 21)

Do Now: Packet Page 10

AIM: SWBAT add and subtract integers.

"Do Now"

1) What is the IDENTITY ELEMENT for Addition? 0 For Multiplication? 1

2) What is the additive inverse of $\frac{1}{4}$? $-\frac{1}{4}$ Multiplicative inverse? $\frac{4}{1} \rightarrow 4$

opposite reciprocal

Simplify the following:

3) $-8 + 2 = -6$ 4) $-2 + 4 = 2$ 5) $5 - 10 = -5$

6) $-3 + 9 = 6$ 7) $2 - 7 = -5$ 8) $-10 + 12 = 2$

ADDING & SUBTRACTING INTEGERS

I) Get rid of DOUBLE SIGNS first!

- + - becomes a NEGATIVE (so 7 + -3 becomes 7 - 3)
- - - becomes a POSITIVE (so 6 - -3 becomes 6 + 3)

II) BOX YOUR TERMS!

** The sign IN FRONT of the number goes with the number **

III) When **COMBINING INTEGERS** with the **SAME** signs

⇒ **ADD** the numbers and **KEEP** the same sign.

⇒ **ADD** and **KEEP**

Examples:

A) $12 + 4$ $= 16$ *Basic Addition – adding two positive numbers*	**B)** $-12 + -4$ $-12 - 4$ (get rid of double signs) $-12 \quad -4$ (box terms) $= -16$ (Same Signs → Add & Keep)
C) $25 - (-16)$ $25 + 16$ (get rid of double signs) $= 41$ *Basic Addition – adding two positive numbers*	**D)** $-25 + -16$ $-25 - 16$ (get rid of double signs) $-25 \quad -16$ (box terms) $= -41$ (Same Signs → Add & Keep)

IV) When **COMBINING INTEGERS** with **DIFFERENT** signs
⇒ **IGNORE** the signs and **SUBTRACT** numbers. Keep the sign of whatever you have more of
Subtract the absolute values. Keep the sign of the number with the largest absolute value.
⇒ **SUBTRACT** and **THINK** → the sign you have more of

A) 12 + −8
12 − 8 (get rid of double signs)
12 −8 (box terms)
4 (Different Signs → Subt. & Think)
There are more positives, so the answer is positive

B) −37 + 16
−37 + 16 (box terms)
−21 (Different Signs → Subt. & Think)
37 has the higher absolute value, so the answer is negative

In-Class Examples:

Same Signs ⇒ ADD & KEEP **Different Signs** ⇒ SUBTRACT & THINK

1) 12 + 20 = 32 (all positives)
2) −12 + −20 = −32 (all negatives)
3) −12 + 20 = 8 (more positives)
4) 12 + −20 = −8 (more negatives)
5) −25 + 25 = 0
6) −25 + −25 = −50 (all negatives)
7) −10 + 5 = −5 (more negatives)
8) −15 + 7 = −8
9) −14 + −15 = −29
10) 14 + (−8) = 6
11) −7 + −18 = −25
12) −12 + 5 = −7
13) −3 + 2 + 4 = 3
14) −5 + −7 + −3 = −15
15) −7 + −2 + −8 = −17

**Absolute value bars are evaluated like parenthesis. Do whatever is inside the bars first, and then find the absolute value.

16) |−4| + |5| = 4 + 5 = 9
17) |0 + −2| = |−2| = 2
18) |6| + |−6| = 6 + 6 = 12
19) |−4 + 0| = |−4| = 4

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Homework - Adding & Subtracting Integers

Remember to: Get rid of Double Signs FIRST, and then Box your Terms. Next, choose your rule (Same Signs or Different Signs) and follow it.

Same signs ⇒ _____ Different signs ⇒ _____

1) −4 + 12 2) 8 + −10 3) −7 + −11 4) 25 + −4

5) −19 + −3 6) −17 − (−5) 7) −25 + −12 8) −31 + 31

9) 5 + (−21) 10) −3 + −17 11) -20 - (-2) 12) 0 + −15

13) −8 + 9 + −2 14) −3 + 12 + −4 15) 16 + −9 + −7

Complete the statement using always, sometimes, or never.

Always = Always True, Sometimes = Sometimes True, Never = Never True

Look at the examples above to help you!!!

16) The sum of two positive integers is _____ zero.

17) The sum of zero and a positive integer is _____ zero.

18) The sum of zero and a negative integer is _____ zero.

19) The sum of a positive integer and a negative integer is _____ zero.

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