Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CFS for top quality work**

* + Annotate problem with margin notes
	+ Model is drawn to represent known and unknown information
	+ Expression or equation is written aligning with model
	+ All calculations are shown/check is performed
	+ Answer statement is written

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 1 LESSON 8

**AIM**: SWBAT apply the properties of operations to add and subtract integers to solve multi-step mathematical and real-world problems

**THINK ABOUT IT!**

Three scholars started solving the same problem shown below but all came up with different expressions. They ask another scholar who is right and the scholar says they all are. Do you agree with the fourth scholar? Explain and prove by evaluating the expressions.

*Micah is playing a card game with positive and negative values. He currently has a card with a value of 24, -17, and -12. What will be the total value of his hand if he picks up a card for 19 points and then another card for -11 points?*

Student A: 24 – 17 – 12 + 19 – 11

Student B: 24 + (-17) + (-12) + 19 + (-11)

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Key Point

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| --- |
| Different expressions can have the same \_\_\_\_\_\_\_\_\_\_ and accurately describe a problem. |

**Interaction with New Material**

Samantha’s bank account had the following deposits and deductions for the past three transactions:

|  |  |
| --- | --- |
| **Date** | **Transaction** |
| 9.12.15 | -$62 |
| 9.13.15 | -$44 |
| 9.14.15 | Deposit $88 |

-$62, -$44, $88. She owes her friend $10. If her account balance started at $25, will she have enough money to pay her friend?

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**PARTNER PRACTICE**

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|  |
| --- |
| *Bachelor Level* |

1. On August 1, Stacy had a negative balance in her bank account: she was $43 in debt.
	1. After depositing $75 from her pay check on August 15, what does Stacy’s balance say?
	2. In the next two weeks, Stacy again overcharges her credit card, spending a total of $115. What does her bank statement say at the end of the month, after making these purchases?
	3. What is the change in Stacy’s bank statements, from the beginning of August until the end?
	4. Write one expression that could be evaluated to determine Stacy’s balance

|  |
| --- |
| *Master Level* |

1. A number is increased by 16 and then decreased by 20. The result is -4. What was the number?
2. Write a word problem that could be expressed by the expression 45 – 75 +52 and draw a model to help solve.

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**INDEPENDENT PRACTICE**

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| *Bachelor Level* |

1. The boiling point of water is 212°F. Paul wants to boil water to make pasta, but right now he only has ice, which is at a temperature of -14°F. How many degrees must Paul change the temperature of the ice for it to become boiling water?

**CFS for top quality work**

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1. A team is playing a game and currently has 43 points. If they lose 56 points and then gain 13 points, what will their score be? Write an expression that models this situation and evaluate the expression.

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|  |
| --- |
| *Master Level* |

1. Shiela is playing a card game with positive and negative values. In her hand she currently has 14, -23, and 10. Write and evaluate an expression that represents her hand if she puts back the -23 and picks up a -41.
2. Taryn and Jackie are playing a game against each other. Taryn has 52 points and Jackie has -24 points. Jackie score 35 points and Taryn losses the same amount. Who has more points and by how much?
3. The Patriots and the Jets played football last week. The table below shows each team’s first five plays of the game.

|  |  |  |
| --- | --- | --- |
| Plays | Patriots | Jets |
| 1 | Loss of 15 yards | Gain of 25 yards |
| 2 | Gain of 24 yards | Gain of 19 yards |
| 3 | Loss of 12 yards | Loss of 11 yards |
| 4 | Gain of 38 yards | Loss of 17 yards |
| 5 | Loss of 21 yards | Loss of 14 yards |

Step A: Write an expression for each team to determine their total yards gained or lost.

Step B: Which team had gained more yards after the fifth play? How many more yards did they gain?

Step C: If the Patriots started on the 20 yard line and the Jets started on the 35 yard line, where would each team be after the five plays?

|  |
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| *PhD Level* |

1. **Task** - Determine if the following statements are possible or not and provide examples:

***Is it possible for…***

* Two numbers to have a sum that is a smaller value than the difference of the two numbers?
* Two numbers to have a positive sum and negative difference?
* Two numbers to have a negative sum and positive difference?
* Two numbers to have a negative sum and negative difference?

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**EXIT TICKET**

|  |  |  |  |
| --- | --- | --- | --- |
| Self-assessment | I mastered the learning objective today. | I am almost there.  | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there.  | You need more practice and feedback. |

1. In a football game, a team gained 8 yards on one play, lost 4 yards on the next play, and then lost 3 yards on each of the next two plays. Write an integer that represents the total number of yards gained or lost on the four plays.
2. Over the course of 4 hours, the temperature in Juneau, Alaska fluctuated immensely. The table below shows the change in temperature for each hour for the first three hours.

|  |  |
| --- | --- |
| Hour | Temperature Change (in degrees F) |
| 1 | + 3 |
| 2 | - 12 |
| 3 | +5 |
| 4 | ? |

If the temperature at the start was -9 degrees Fahrenheit and the ending temperature was -2 degrees Fahrenheit, how much did the temperature change during the fourth hour?