**CFS for top quality work**

* + Problems are annotated for meaning
	+ Number line is **drawn and labeled**
	+ Expression is rewritten as needed
	+ **Sign and operation** are indicated from the number line

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

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

UNIT 1 LESSON 9

**AIM**: SWBAT use a number line to add and subtract rational numbers

**THINK ABOUT IT!**

Model (do not solve) the following expressions on the number lines provided. Determine the sign of the final sum or difference for each expression and what operation you would use to solve.

|  |  |
| --- | --- |
| 5 + (-4) | 5 ½ + (-4) |
| -1 – 3  | -1.5 – 3  |

Key Point

|  |
| --- |
| A number line is a useful tool to \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ rational numbers |

**Interaction with New Material:**

Eliza’s starts off her day in debt 5 ¾ dollars. She deposits 4 ½ dollar and then another $6.25. She needs bus fare for the ride home which costs $5.00. Does she have enough money in her account at the end of the day?

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**PARTNER PRACTICE**

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| --- |
| *Bachelor Level* |

1. Determine the sign (do not solve) and what operation you would use to determine the answer of each expression by modeling on the number line. Circle positive/negative ***and*** add/subtract.

|  |  |
| --- | --- |
| 4 ¼ - 5 ½  Positive or NegativeAdd or Subtract | -1.2 – 3.2  Positive or NegativeAdd or Subtract |
| 1.25 – (-2.5) Positive or NegativeAdd or Subtract | $$-\frac{3}{4}+(-2.1)$$ Positive or NegativeAdd or Subtract |

|  |
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| *Master Level* |

1. Draw a number line and evaluate the expression

$$-\frac{4}{5}-\frac{3}{4}$$

1. Which of the following values could be substituted for n and result in a negative answer? Select all that apply

$$5.25-n$$

1. -5 ½
2. -6
3. 4 ½
4. 5
5. $5.25$
6. 5 ½
7. 6.25

**INDEPENDENT PRACTICE**

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| --- |
| *Bachelor Level* |

1. Evaluate the following expressions by first drawing a number line and modeling.

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	1. -4.5 + 3.8
	2. $2-1\frac{1}{2}$
	3. $\frac{5}{6}+\left(-\frac{1}{6}\right)$

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

1. Evaluate the expression $3.4+ \left(-5\frac{2}{5}\right)$
2. Ashleigh started with $57.34 in her bank account. She overdrew her account and spent $78.65 on new clothes. What is her account balance after buying the clothes?
3. A tiny fish is swimming 5 and a half feet below the water of a pond. It sees something it might want to eat and goes 1 2/5 feet up. It was only a pebble ☹. Represent the problem by writing an expression and drawing a number line to help you solve for the fish’s final location in relation to the surface of the pond.

|  |
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| *PhD Level* |

1. What is the distance between (-3$\frac{1}{2}$) and 1.75 on the number line? Represent the problem on the number line below.



Write two number sentences that you can use to solve for the distance between the two points. Pick one to solve

1. Tommy’s account this morning showed that he had -$123.27. At the end of the day his account said that he had $214.55. What is his total amount gained if he deposited $23.23 the next day? Draw a number line to model the situation and determine what the change in his account was over the course of the day.
2. Using the multiple choice question below, determine which two answer choices that you can immediately eliminate without doing any calculations. Explain how you were able eliminate those answer choices.

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Evaluate: $-4.5-\left(-1\frac{4}{5}\right)-\left(-2.1\right)+4\frac{1}{2}$

1. -12.9
2. 12.9
3. -5.7
4. 5.7

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

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

**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. Draw a number line to represent and evaluate the expression

$$ \left(-\frac{4}{3}\right)-\left(-\frac{3}{4}\right)$$

1. Dominque had a balance of 250.55 in her bank account in December. In January, she withdrew 432.94 over the course of the month. Write an expression to represent the situation and use a number line to determine Dominique’s account balance at the end of January.