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

**CFS for top quality work**

* + Problem is annotated for meaning (**operations** and **signs of numbers**)
  + Model is drawn representing the situation
  + Plan is written for solving
  + **Estimation** is shown for solution
  + Expression is evaluated and solution is **represented in the context of the problem**
  + Answer is checked against estimation

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

UNIT 2 LESSON 10

**AIM**: SWBAT apply properties of operations to multiply and divide rational numbers to solve multi-step (2-3 steps) mathematical and real-world problems

In my own words this means I will be able to…

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**THINK ABOUT IT!**

Ms. Dust uses the subway every day to and from work. Each ride costs her $2.75. If she works five days per week, what rational number represents the total change to her account due to transportation after one work week

Key Point

|  |
| --- |
| Mathematicians use \_\_\_\_\_\_\_\_\_\_\_\_\_ to make sense of and \_\_\_\_\_\_\_\_ real-world problems |

**Interaction with New Material**

Ex. 1) The elevation of Mt. Humphrey’s in Arizona is 13,115 feet above sea level. Hikers at the top of the mountain begin their decent at 11:00am and make it to 6,342feet by 3:00pm. If the hikers continue at this same rate, what rational number value represents the elevation change by the hikers from 11:00am to 4:00pm? Round your answer to the nearest tenth of a foot.

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**PARTNER PRACTICE**

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| *Bachelor Level* |

1. During a five-hour period, a cold front moved into New England with an overall temperature change of -40 degrees.
2. What was the average hourly change in temperature?
3. If the temperature started at 75 degrees, what was the temperature at the end of the cold front?
4. Every week for 5 weeks, Jean went to the bank and withdrew $250 from his account. If his account balance started at $1,100, what was his new balance at the end of the five weeks?

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| *Master Level* |

1. The table shows the average temperatures for the months of January and February for three states. Coldhotlandia had a temperature change that was twice as big as the largest temperature change in this table. What was Coldhotlandia’s temperature change?

|  |  |  |
| --- | --- | --- |
| **State** | **January Temperature (˚F)** | **February Temperature (˚F)** |
| Alaska | -11 | 5.2 |
| Florida | 46.9 | 58.1 |
| Wyoming | -3.4 | -20.2 |

**INDEPENDENT PRACTICE**

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| *Bachelor Level* |

1. In a trivia game, you lose 75 points for every incorrect answer and gain 100 points for every correct answer.

Part A: You answered the first four questions incorrectly. What is your score at this point?

Part B: In order to get your score back to a positive amount, how many correct answers do you need to get in a row?

1. A scuba diver is swimming at a depth of 30 feet. In order to safely ascend to the surface, she will swim straight up at a rate of 2.5 feet per second.

Part A: Write an expression that can be used to determine how many feet the scuba diver can swim in 7 seconds.

Part B: How many seconds will it take for the scuba diver to reach the surface?

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| *Master Level* |

1. Marc gets on an elevator at the 90th floor of his building. After descending to the 63rd floor, the elevator malfunctioned and stopped. It takes the elevator 0.2 minutes to travel down one floor, and Marc had to wait an additional 13 minutes before the elevator started moving again and traveled down to the ground floor, where Marc got off. How long was he in the elevator?
2. A group of archaeologists leaves a site in Jordan. Their starting elevation was 647 meters, and they descended to 251 meters. If it takes them 1.25 hours to descend 24 meters, how long did it take them to descend to their final elevation?
3. The temperature at 10 PM was 2.7˚C. At midnight, the temperature started dropping -0.4 ˚C per hour. What was the temperature at 5 AM?

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| *PhD Level* |

1. When buying stocks (also called buying shares), people pay the current price of the stock for every share they buy. A stock price was $43.66 on Monday morning. On Tuesday, the stock was only worth ¾ of what it was on Monday. What rational number represents the change to someone’s bank account if they bought 9 shares of stock on Monday?

**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 Chicago, the temperature dropped from **21 degrees** to **-7 degrees** over the course of 6 hours. **How many degrees** did the temperature drop on average per hour?
2. An hourglass loses **8 ¼ oz of sand** every **five minutes**. **How much sand** will be in the hourglass after a half hour if it starts with 50 oz and 20.4 oz are added at the **end of the 30 minutes**?