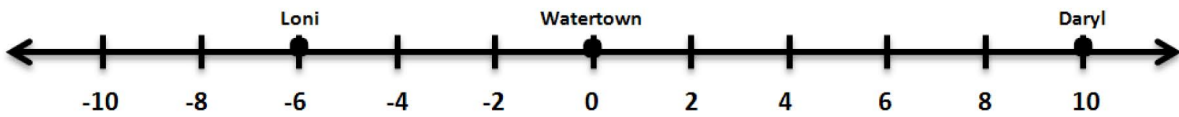


Name _____

Date _____

Statements of Order in the Real World

1. Loni and Daryl call each other from different sides of Watertown. Their locations are shown on the number line below using miles. Use absolute value to explain who is a further distance (in miles) from Watertown. How much closer is one than the other?



2. Claude recently read that no one has ever scuba dived more than 330 meters below sea level. Describe what this means in terms of elevation using sea level as a reference point.

1. Negative air pressure created by an air pump makes a vacuum cleaner able to collect air and dirt into a bag or other container. Below are several readings from a pressure gauge. Write rational numbers to represent each of the readings, and then order the rational numbers from least to greatest.

Gauge Readings (pounds per square inch)	25 psi pressure	13 psi vacuum	6.3 psi vacuum	7.8 psi vacuum	1.9 psi vacuum	2 psi pressure	7.8 psi pressure
Pressure Readings (pounds per square inch)							

2. The fuel gauge in Nic's car says that he has 26 miles to go until his tank is empty. He passed a fuel station 19 miles ago and a sign says there is a town only 8 miles ahead. If he takes a chance and drives ahead to the town and there isn't a fuel station there, does he have enough fuel to go back to the last station? Draw a diagram along a number line, and use absolute value to find your answer.

1. Loni and Daryl call each other from different sides of Watertown. Their locations are shown on the number line below using miles. Use absolute value to explain who is a further distance (in miles) from Watertown. How much closer is one than the other?



Loni's location is -6 and $|-6| = 6$ because -6 is 6 units from 0 on the number line. Daryl's location is 10 and $|10| = 10$ because 10 is 10 units from 0 on the number line. We know that $10 > 6$, so Daryl is farther from Watertown than Loni.

$10 - 6 = 4$; Loni is 4 miles closer to Watertown than Daryl.

2. Claude recently read that no one has ever scuba dived more than 330 meters below sea level. Describe what this means in terms of elevation using sea level as a reference point.

330 meters below sea level is an elevation of -330 feet. "More than 330 meters below sea level" means that no one has ever had more than 330 meters between them and sea level when they were below the water's surface while scuba diving.

1. Negative air pressure created by an air pump makes a vacuum cleaner able to collect air and dirt into a bag or other container. Below are several readings from a pressure gauge. Write rational numbers to represent each of the readings, and then order the rational numbers from least to greatest.

Gauge Readings (pounds per square inch)	25 psi pressure	13 psi vacuum	6.3 psi vacuum	7.8 psi vacuum	1.9 psi vacuum	2 psi pressure	7.8 psi pressure
Pressure Readings (pounds per square inch)	25	-13	-6.3	-7.8	-1.9	2	7.8

$$-13 < -7.8 < -6.3 < -1.9 < 2 < 7.8 < 25$$

2. The fuel gauge in Nic's car says that he has 26 miles to go until his tank is empty. He passed a fuel station 19 miles ago and a sign says there is a town only 8 miles ahead. If he takes a chance and drives ahead to the town and there isn't a fuel station there, does he have enough fuel to go back to the last station? Include a diagram along a number line, and use absolute value to find your answer.

No, he does not have enough fuel to drive to the town and then back to the fuel station. He needs 8 miles worth of fuel to get to the town, which lowers his limit to 18 miles. The total distance between the fuel station and the town is $|8| + |-19| = 8 + 19 = 27$ miles. Nic would be 9 miles short on fuel. It would be safer to go back to the fuel station without going to the town first.