Math 7 Unit 1 quiz 2: Distance on a number line, Temperatures below zero and temperature change

Name _____ Date _____ Period _____

8 questions, 21 points

1. In a long, straight school hallway, doors are placed by their distance in meters from the main office door, with east positive and west negative. Aisha leaves the art room door at −30 and walks to the gym door at 19. Then Aisha walks from the gym door back to the main office door. How many meters does Aisha walk in all? (2 points)

2. A number line is marked every 20 units, and only 0 is labeled. Point J is on the third mark to the left of 0, and point K is on the fifth mark to the right of 0. Find JK. (2 points)

3. The temperature fell 7 degrees, and afterwards it was above 0°C. Grace says it might have started below zero. Is she right? Explain, using earlier = later − change. (2 points)

4. (3 points)

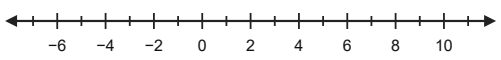
(a) Find the distance between the points at −13.6 and 4.9.

(b) Kevin says the points at $-2\frac{1}{4}$ and $-5\frac{2}{3}$ are $7\frac{11}{12}$ units apart. Explain what he did wrong, and find the correct distance.

5. (3 points)

(a) Write the equation $|x - 2| = 7$ as a sentence about distance on a number line.

(b) Find every value of x that makes it true.



Free sample from math.wiki for classroom use. Do not post. math.wiki

6. A rover on Mars recorded an afternoon high of $-18°\text{C}$. At dawn the next day it recorded a low of $-74°\text{C}$. (3 points)

(a) Find the change in temperature from the afternoon high to the dawn low, and say whether it is a rise or a fall.

(b) On the afternoon of that next day, the high was $-22°\text{C}$. Was it warmer or colder than the first afternoon's high, and by how many degrees?

7. In a science lab, Hiro cools a liquid in a cooling bath and reads its temperature every 5 minutes. (3 points)

Time (min)	**0**	**5**	**10**	**15**	**20**
Temperature (°C)	9	2	−6	−11	−13

(a) Find the change over each 5-minute interval. In which interval did the temperature fall the most?

(b) Find the change over the whole 20 minutes, and show that it equals the sum of the four changes.

8. At 8 a.m. a thermometer in the city of Toronto reads $-5°\text{C}$, and at the same moment a thermometer in the city of Buffalo, across the border, reads $20°\text{F}$. Arjun says it is 25 degrees warmer in the second city, because $20 - (-5) = 25$. (3 points)

(a) Explain what is wrong with Arjun's reasoning.

(b) $-5°\text{C}$ is the same temperature as $23°\text{F}$. Which city is warmer, and by how many Fahrenheit degrees?

Free sample from math.wiki for classroom use. Do not post. math.wiki