Name:_____ Block:_____ Date:_____

AWM 10 **Ch. 4.1A Temperature - Celsius** Notes

Another quantity that we measure is _____. Just like length, surface area and volume, we can measure temperature in different units. The US uses the Fahrenheit scale (°F) of the imperial system, while Canada uses the Celsius scale (°C) of the SI.

Water freezes at ____°C or ____°F and boils at 100°C or 212°F. Since water freezes at 0°C and 32°F, the relationship between the two temperature systems can be calculated with the following formulas, where *C* represents degrees Celsius and *F* represents degrees Fahrenheit.

$$C = \frac{5}{9}(F - 32)$$

Changing F to °C:

Ex. 1) While visiting Florida, you heard a local person say that it had been very cold overnight, as it was only 42°. At first, you thought this was not cold, but then you realized the person meant degrees Fahrenheit. What was the temperature in degrees Celsius?

$C = \frac{5}{9}(F - 32)$	Write down the formula
$C = \frac{5}{9}(42 - 32)$	Put the number for "F" in the formula
$C = \frac{5}{9}(10)$	Brackets first: 42-32
$C = \frac{50}{9}$	Then multiplication & division
$C = 5.6°C$	Round to 1 decimal place and include the units!

The temperature is about 5.6°C (which would be very cold in Florida.)

Ex. 2) Mrs. Moore went to Disneyland with her family. The day they arrived it was 114°F. It was record breaking hot. What would that temperature convert to in °C?

Temperature Ranges:

Ex. 3) Chinook winds are known to cause great changes in temperature over a short period of time. The most extreme temperature change in a 24-hour period occurred in Loma, Montana, on January 15, 1972. The temperature rose from –54°F to 49°F.

a) What were the minimum and maximum temperatures in degrees Celsius?

$C = \frac{5}{9}(F - 32)$ Write down the formula

Starting temp: *Final Temp:*

b) What was the change in temperature in degrees Celsius?

Temp. change = _____ – _____

Temp. change = 9.4°C – (–47.8°C) Two negatives = a positive!

Temp. change = 9.4°C + 47.8°C = 57.2°C

The temperature increased by 57.2°C.

Name:_____ Block:_____ Date:_____

AWM10 **Ch. 4.1B – Temperature (Fahrenheit)** Notes

When you have the temperature in °C and want to know the temperature in ° you use this formula:

$$F = \frac{9}{5}C + 32$$

Changing °C to F:

Ex. 1) You were paving a road with heated tar during a hot summer day. You noted that the external temperature of the tar was 48°C. What was this in degrees Fahrenheit?

$F = \frac{9}{5}C + 32$	1) Write out the equation.
$F = \frac{9}{5}(48) + 32$	2) Replace the C with the temperature in C.
$F = 86.4 + 32$	3) Do multiplication / division: 9 X 48 ÷ 5
$F = 118.4°C$	4) Do addition: + 32

Temperature Ranges:

Ex. 2) Chinook winds are known to cause great changes in temperature over a short period of time. The most extreme temperature change in a 24-hour period occurred in Loma, Montana, on January 15, 1972. The temperature rose from –47.8°C to 9.4°C.

b) What were the minimum and maximum temperatures in degrees Celsius?

$F = \frac{9}{5}C + 32$ Pick the right formula. What you want is in front.

Starting temp:

$F = \frac{9}{5}(-47.8) + 32$

Multiplication & Division

Addition last

Final Temp:

$F = \frac{9}{5}(9.4) + 32$

a) What was the change in temperature in degrees Fahrenheit?

Temp. change = final temp – starting temp

Temp. change = 49°F – (–54°F) Two negatives = _____!

Temp. change = 49°F + 54°F = 103°F

The temperature increased by 103°F.