

Name: Key

1. Explain what significance the number 32 has in the formulas for converting between Fahrenheit and Celsius.

$$32^{\circ} F = 0^{\circ} C$$

2. The hottest recorded temperature in the world was 134° Fahrenheit in Death Valley, California. What would this temperature be in Celsius?

$$\begin{aligned} C &= \frac{5}{9} (F - 32) \\ &= \frac{5}{9} (134 - 32) \\ &= 56.67^{\circ} C \end{aligned}$$

3. The coldest temperature ever recorded in Canada was in Snag, Yukon in 1947. It was -63° Celsius, what would this be in Fahrenheit?

$$\begin{aligned} F &= \frac{9}{5} C + 32 \\ &= \frac{9}{5} (-63) + 32 \\ &= -81.4^{\circ} F \end{aligned}$$

4. Scientists believe the average global temperature could increase by as much as 11.5° F by the year 2100, what is this in Celsius?

$$\begin{aligned} C &= \frac{5}{9} (F) \\ &= \frac{5}{9} (11.5) \\ &= 6.39^{\circ} C \end{aligned}$$

5. The average temperature in Fort Nelson is $-0.7^{\circ} C$. The average temperature in Juneau, Alaska is $42^{\circ} F$, how much colder (in Celsius) is Fort Nelson?

$$\text{temp in Juneau} = 42^{\circ} F$$

$$\begin{aligned} &42^{\circ} F \text{ in Celsius} \\ C &= \frac{5}{9} (42 - 32) \\ &= 5.56^{\circ} C \\ &\underline{- (-0.7)} \\ &= 6.26^{\circ} C \end{aligned}$$

It is $6.26^{\circ} C$ colder
in Fort Nelson