

Challenge

Kelvin Temperature Scale

In 1848, a British mathematician and physicist named William Thomson Kelvin created a temperature scale that is now known as the Kelvin Temperature Scale. This scale is used by scientists to measure extremely hot and cold temperatures. On the Kelvin scale, degrees are called *kelvins* (K) and no degree symbol (°) is used. So 100 degrees Kelvin is written as 100 K.

To write a Celsius temperature as a Kelvin temperature, use this formula:

$$K = ^\circ\text{C} + 273.$$

To write a Kelvin temperature as a Celsius temperature, use this formula:

$$^\circ\text{C} = K - 273.$$

Write each as a Celsius temperature.

1. 450 K = _____

2. 632 K = _____

3. 276 K = _____

4. 325 K = _____

5. 900 K = _____

6. 410 K = _____

7. 1,500 K = _____

8. 2,000 K = _____

Write each as a Kelvin temperature.

9. 128°C = _____

10. 35°C = _____

11. 67°C = _____

12. 89°C = _____

13. 512°C = _____

14. 299°C = _____

15. 845°C = _____

16. 1,527°C = _____

17. Think About It What are the freezing point and boiling point of water on the Kelvin Temperature Scale?

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To write a Celsius temperature as a Kelvin temperature, use this formula:

$$K = ^\circ\text{C} + 273.$$

To write a Kelvin temperature as a Celsius temperature, use this formula:

$$^\circ\text{C} = K - 273.$$

Write each as a Celsius temperature.

1. 450 K = 177°C

2. 632 K = 359°C

3. 276 K = 3°C

4. 325 K = 52°C

5. 900 K = 627°C

6. 410 K = 137°C

7. 1,500 K = 1,227°C

8. 2,000 K = 1,727°C

Write each as a Kelvin temperature.

9. 128°C = 401 K

10. 35°C = 308 K

11. 67°C = 340 K

12. 89°C = 362 K

13. 512°C = 785 K

14. 299°C = 572 K

15. 845°C = 1,118 K

16. 1,527°C = 1,800 K

17. **Think About It** What are the freezing point and boiling point of water on the Kelvin Temperature Scale?

freezing point: 273 K; boiling point: 373 K