Temperature

Temperature tells how hot or cold something is. In the U.S., we mostly use Fahrenheit (°F): water freezes at 32°F and boils at 212°F.

Reference temperatures (°F)	What it feels like
32°F	water freezes (icy outside)
50°F	cool day, need a sweater
70°F	comfortable room temperature
90°F	hot summer day

Key Concepts

1. **Temperature** measures hot/cold. The unit in the U.S. is *degrees Fahrenheit* (°F).

2. Water **freezes** at 32°F. Below 32°F is below freezing; above is above freezing.

3. A typical comfortable room is about 70°F. Cold winter days are 20°F or below; hot summer days reach 90°F or more.

4. **Temperature changes** are simple addition or subtraction. "Rose 13 degrees" adds 13; "dropped 13 degrees" subtracts 13.

Worked Examples

① The temperature was 58°F in the morning and 75°F in the afternoon. How much did it rise?

"How much did it rise" is a difference: $75 - 58 = 17$. So the temperature rose 17°F.

Answer: $17°F$

② Is 30°F above or below freezing?

Water freezes at 32°F. Since $30 < 32$, 30°F is *below* freezing.

Answer: *Below freezing*

③ Which is warmer: 85°F or 60°F?

Higher number = warmer. $85 > 60$, so 85°F is warmer.

Answer: $85°F$

Practice Problems

Calculate, compare, or pick the right description.

1. $72°F - 55°F = ?$ _____

2. $90°F - 68°F = ?$ _____

3. $40°F + 18°F = ?$ _____

4. Above or below freezing: 25°F? _____

5. Warmer: 80°F or 65°F? _____

6. $50°F + 22°F = ?$ _____

7. $100°F - 35°F = ?$ _____

8. Above or below freezing: 35°F? _____

9. Cooler: 45°F or 60°F? _____

10. 82°F − 59°F = ? _____

11. Coat or shorts at 28°F? _____

12. 65°F + 15°F = ? _____

Study Tips

- ☞ Memorize three reference points: 32°F = freezing, 70°F = comfy room, 100°F = scorching hot. They make new temperatures easier to picture.
- ☞ Higher number = warmer; lower number = colder. Comparing temperatures is just comparing whole numbers.
- ☞ A *change* in temperature is just the difference between two readings. "Rose Δ degrees" adds; "dropped Δ degrees" subtracts.

✍ Word Problems

1. On Monday the high was 78°F. On Tuesday it was 65°F. How many degrees cooler was Tuesday?

Answer: _____

2. The temperature at 6 a.m. was 48°F. By noon it rose 24°F. What was the noon temperature? Was it above or below room temperature (70°F)?

Answer: _____

Answer Key — with Friendly Explanations

Practice Problems

1. $72 - 55 = 17$.

Answer: $17°F$

2. $90 - 68 = 22$.

Answer: $22°F$

3. $40 + 18 = 58$.

Answer: $58°F$

4. $25 < 32$, so below freezing.

Answer: *Below freezing*

5. $80 > 65$, so $80°$F is warmer.

Answer: $80°F$

6. $50 + 22 = 72$.

Answer: $72°F$

7. $100 - 35 = 65$.

Answer: $65°F$

8. $35 > 32$, so above freezing (barely).

Answer: *Above freezing*

9. $45 < 60$, so $45°$F is cooler.

Answer: $45°F$

10. $82 - 59 = 23$.

Answer: $23°F$

11. $28°$F is below freezing — definitely a coat.

Answer: *Coat*

12. $65 + 15 = 80$.

Answer: $80°F$

Word Problems

1. $78 - 65 = 13$ degrees cooler.

Answer: $13°F$ *cooler*

2. $48 + 24 = 72°$F. Above room temperature.

Answer: $72°F$, *above*

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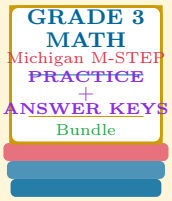

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