

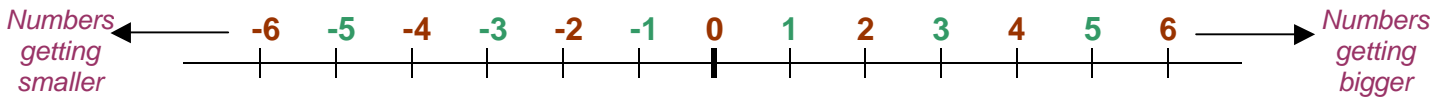
Negative Numbers

Remember

Sometimes we need to use numbers less than 0. These are called negative numbers. Negative numbers have a minus sign in front and you say the word minus in front of the number.

So -4 is 'minus four'. Which of these numbers are the biggest?

The Number Line



A number is **bigger** than another number if it is further to the **right** on the number line.

A number is **smaller** than another number if it is further to the **left** on the number line.

Now Try These

1. Which of these numbers are the **biggest**?

- a. 7 or 5 _____
- b. 0 or 6 _____
- c. 0 or -3 _____
- d. -5 or -2 _____
- e. -7 or -8 or -9 _____
- f. 0 or 13 or -23 _____
- g. 18 or 3 or -3 _____

2. Put these numbers in order **largest** first.

- a. 17 63 -4 -18 22 -35 0 41 _____
- b. -99 45 3 -32 -38 17 4 -12 _____

3. Which of these numbers are the **smallest**?

- a. -19 or 10 _____
- b. 0 or -12 _____
- c. -5 or -7 _____
- d. -1 or -90 _____
- e. -6 or -10 or -8 _____
- f. 10 or -10 or -15 _____
- g. -19 or -99 or 9 _____

4. Put these numbers in order **smallest** first.

- a. 15 23 -44 18 -22 -35 70 -41 _____
- b. -9 5 -3 -32 -40 0 -84 -12 _____

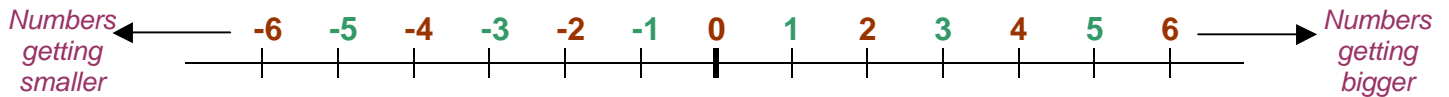
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Now Try These

1. Which of these numbers are the **biggest**?

- 7 or 5
- 0 or 6
- 0 or -3
- 5 or -2
- 7 or -8 or -9
- 0 or 13 or -23
- 18 or 3 or -3

2. Put these numbers in order **largest** first.

- 17 63 -4 -18 22 -35 0 41 63 41 22 17 0 -4 -18 -35
- 99 45 3 -32 -38 17 4 -12 45 17 4 3 -12 -32 -38 -99

3. Which of these numbers are the **smallest**?

- 19 or 10
- 0 or -12
- 5 or -7
- 1 or -90
- 6 or -10 or -8
- 10 or -10 or -15
- 19 or -99 or 9

4. Put these numbers in order **smallest** first.

- 15 23 -44 18 -22 -35 70 -41 -44 -41 -35 -22 15 18 23 70
- 9 5 -3 -32 -40 0 -84 -12 -84 -40 -32 -12 -9 -3 0 5

Comparing Negatives

Remember

If a number is bigger than another number we say it is greater than. The symbol for greater than is $>$. So $10 > 9$ and $-1 > -5$

If a number is smaller than another number we say it is less than. The symbol for less than is $<$. So $9 < 15$ and $-8 < 0$

Now Try These

1. Put the correct sign, either $>$ or $<$, between these pairs of numbers.

a. -17 ____ 16

b. -19 ____ -18

c. 25 ____ -7

d. 0 ____ -10

e. -4 ____ -5

f. -3 ____ 0

2. Write these pairs of numbers in figures putting the **smallest** first.

a. minus one hundred and twenty-two - minus sixty-four _____

b. four hundred - minus two thousand and forty-two _____

c. minus 3 - minus seven hundred and sixty-three _____

3. Write these pairs of numbers in words putting the **largest** first.

a. -32 , -54 _____b. -1700 , -903 _____

c. $-2\ 009$, $-3\ 010$ _____

d. 0 , $-8\ 076$ _____

4. Ring true if you think the comparison is correct, false if it is wrong.

a. $-100 > -900$

true false

b. $-25 > 98$

true false

c. $99 < -10$

true false

d. $-59 < -45$

true false

e. $404 > -202$

true false

f. $-3,759 < 3,790$

true false

g. $0 > -2$

true false

h. $-3 < 3$

true false

Comparing Negatives

Remember

If a number is bigger than another number we say it is greater than. The symbol for greater than is $>$. So $10 > 9$ and $-1 > -5$

If a number is smaller than another number we say it is less than. The symbol for less than is $<$. So $9 < 15$ and $-8 < 0$

Now Try These

1. Put the correct sign, either $>$ or $<$, between these pairs of numbers.

- | | | |
|------------------|-------------------|-----------------|
| a. $-17 \leq 16$ | b. $-19 \leq -18$ | c. $25 \geq -7$ |
| d. $0 \geq -10$ | e. $-4 \geq -5$ | f. $-3 \leq 0$ |

2. Write these pairs of numbers in figures putting the **smallest** first.

- a. minus one hundred and twenty-two - minus sixty-four -122 -64
- b. four hundred - minus two thousand and forty-two -2042 400
- c. minus 3 - minus seven hundred and sixty-three -763 -3

3. Write these pairs of numbers in words putting the **largest** first.

- a. $-32, -54$ minus thirty-two minus fifty-four
- b. $-1700, -903$ minus nine hundred and three
minus one thousand seven hundred
- c. $-2\ 009, -3\ 010$ minus two thousand and nine
minus three thousand and ten
- d. $0, -8\ 076$ zero minus eight thousand and seventy-six

4. Ring true if you think the comparison is correct, false if it is wrong.

- | | | | |
|------------------|-------------------|---------------------|-------------------|
| a. $-100 > -900$ | <u>true</u> false | b. $-25 > 98$ | true <u>false</u> |
| c. $99 < -10$ | true <u>false</u> | d. $-59 < -45$ | <u>true</u> false |
| e. $404 > -202$ | <u>true</u> false | f. $-3,759 < 3,790$ | <u>true</u> false |
| g. $0 > -2$ | <u>true</u> false | h. $-3 < 3$ | <u>true</u> false |

Negative Temperatures

Remember



The boiling point of water is **100°C**. The **freezing point** of water is **0°C**.

A temperature **below freezing** is written as a **negative number**. For example, on a cold night the temperature might drop as low as **-5°C**.

Now Try These Problems

1. The freezer cabinet in Tesco's was supposed to be set at -18°C but after a power cut the temperature had risen by 9 degrees. Which of these two temperatures show how cold the freezer is now.

a. -9°C or -27°C _____

2. What would the thermometer on the right read if:

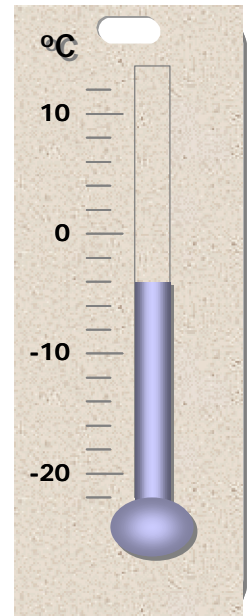
a. the temperature dropped by 6°C _____

b. and then rose by 3°C _____

3. If the temperature starts at 4°C and drops by 15°C . What is the final temperature? _____

4. Here are the minimum and maximum daily temperatures in January in some European cities.

$^{\circ}\text{C}$	Min	Max
Oslo	-9	3
Moscow	-18	-1
Paris	-1	12
London	-2	11
Madrid	0	17
Athens	-2	18



a. Where was it coldest? _____

b. In which city or cities did the temperature not fall below zero? _____

c. Was it colder in Paris or London? _____

5. Put these temperatures in order **coldest** first

a. 5°C , -11°C , 7°C , -10°C , -5°C , 0°C _____

b. -18°C , -32°C , 37°C , -1°C , 0°C , -20°C _____

6. Put these temperatures in order **hottest** first

a. 20°C , -15°C , 7°C , -20°C , -3°C , 60°C _____

b. -38°C , -32°C , 22°C , -4°C , 7°C , 15°C _____

Negative Temperatures

Remember



The boiling point of water is **100°C**. The **freezing point** of water is **0°C**.

A temperature **below freezing** is written as a **negative number**. For example, on a cold night the temperature might drop as low as **-5°C**.

Now Try These Problems

1. The freezer cabinet in Tesco's was supposed to be set at -18°C but after a power cut the temperature had risen by 9 degrees. Which of these two temperatures show how cold the freezer is now.

a. -9°C or -27°C **-9°C**

2. What would the thermometer on the right read if:

a. the temperature dropped by 6°C **-10°C**

b. and then rose by 3°C **-7°C**

3. If the temperature starts at 4°C and drops by 15°C . What is the final temperature? **-11°C**

4. Here are the minimum and maximum daily temperatures in January in some European cities.

$^{\circ}\text{C}$	Min	Max
Oslo	-9	3
Moscow	-18	-1
Paris	-1	12
London	-2	11
Madrid	0	17
Athens	-2	18

a. Where was it coldest? **Moscow**

b. In which city or cities did the temperature not fall below zero? **Madrid**

c. Was it colder in Paris or London? **London**

5. Put these temperatures in order **coldest** first

a. 5°C , -11°C , 7°C , -10°C , -5°C , 0°C **-11°C , -10°C , -5°C , 0°C , 5°C , 7°C**

b. -18°C , -32°C , 37°C , -1°C , 0°C , -20°C **-32°C , -20°C , -18°C , -1°C , 0°C , 37°C**

6. Put these temperatures in order **hottest** first

a. 20°C , -15°C , 7°C , -20°C , -3°C , 60°C **60°C , 20°C , 7°C , -3°C , -15°C , -20°C**

b. -38°C , -32°C , 22°C , -4°C , 7°C , 15°C **22°C , 15°C , 7°C , -4°C , -32°C , -38°C**

