Ordering positive and negative integers

A more negative number is smaller than a less negative number (look at the number line). So -9 is a smaller number than -3.
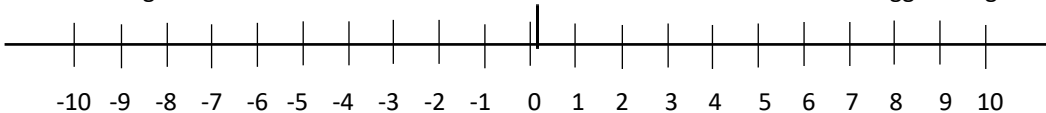
Example: put the following numbers in ascending order:
-10, -12, 4, 1, -2, 8, 5, 7

Answer
-12, -10, -2, 1, 4, 5, 7, 8

smaller integers ←   → bigger integers

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

Some useful fractions and their equivalent decimals include:
$\frac{1}{2} = 0.5$, $\frac{1}{4} = 0.25$, $\frac{3}{4} = 0.75$ $\frac{1}{10} = 0.1$, $\frac{2}{10} = 0.2$, $\frac{3}{10} = 0.3$
Note: when the denominator is 10 simply divide numerator by 10 (move decimal 1 place to left).

Use of mathematical symbols: = equals, ≠ not equal to, > greater than, < less than, ≥ greater than or equal to, ≤ less than or equal to. Examples: Use the correct symbol between the following numbers a) -4☐3, b)5☐2 c) 0.702☐0.722 d) ⅖☐0.4 e) state the meaning of $x \geq 2$
Answers: a) -4 < 3 b) 5 > 2 c) 0.702 < 0.722 d) ⅖ = 0.4 e) x is greater than or equal to 2

Ordering decimals and fractions

Other useful fractions and their equivalent decimals:

$\frac{1}{5} = 0.2, \frac{2}{5} = 0.4, \frac{3}{5} = 0.6, \frac{4}{5} = 0.8$

Example: put the following numbers in ascending order:
$\frac{4}{5}, 0.3, \frac{1}{2}, \frac{2}{5}, 0.2, \frac{1}{10}$
Answer
$\frac{1}{10}, 0.2, 0.3, \frac{2}{5}, \frac{1}{2}, \frac{4}{5}$

Exercise 1 Ordering positive and negative integers

1. Write the following integers in order of size starting with the smallest:
   a. 25, 42, 15, 6, 9, 5, 19, 10

   b. 112, 76, 99,108, 102, 206, 58, 29

   c. 4, -8, -2, -4, -6, -10, 12, 7, 6, 9

2. Write the following numbers in ascending order:
   a. -233, -450, -302, -304, -150, -160, -75, 0

   b. 1006, 1001, 2001, -1, 400, 2022, -10000, -40

   c. 33, 84, 24, 26, 44, 56, 98, 25, 15, 8

3. List the following in descending order:
   a. 85, 91, 72, 64, 28, 51, 88, 98

   b. 2000034, 2000555, 2001555, 2000553

   c. -15, -19, -13, -5, -11, -6, -2, -1

Exercise 2 Use of mathematical symbols

1. Use the correct mathematical symbol between the following numbers:
   a. -2 ☐ 0
   b. 4 ☐ 0
   c. 4 ☐ -2
   d. 5 ☐ 3
   e. -6 ☐ -7
   f. -8 ☐ -3
   g. 7 ☐ 10
   h. 1.10 ☐ 1.11
2. Write statements to express the following:
   a. $x \geq 4$
   b. $x < 1$
   c. $x \leq -3$
   d. $-2 \leq x \leq 4$

3. Use mathematical symbols to express the following:
   a. x is greater but not equal to 5
   b. x is less than or equal to -2
   c. x is greater or equal to 7
   d. x has values between 1 and 3 inclusive

Exercise 3 Ordering decimals and fractions

1. Put the following fractions in ascending order:
   a. 3/10, 1/5, 1/10, 3/5, 7/10

   b. 6/7, 4/5, 9/10, ½, 6/10

   c. 2/3, 3/5, 5/6, ¾, 1/3

2. Put the following decimals in ascending order:
   a. 0.233, 0.123, 0.323, 0.203, 0.332

   b. 4.551, 4.550, 4.450, 4.451, 4.505

   c. 0.0409, 0.0419, 0.0410, 0.0411

3. Place the following decimals/fractions in descending order:
   a. ½, 0.49, 0.55, 0.65, 3/5, 2/5, 0.81, 4/5

   b. 0.75, 2/3, 4/7, 5/6, 0.9, 19/20

   c. 13/15, 13/16, 13/14, 13/18, 13/17, 13/19