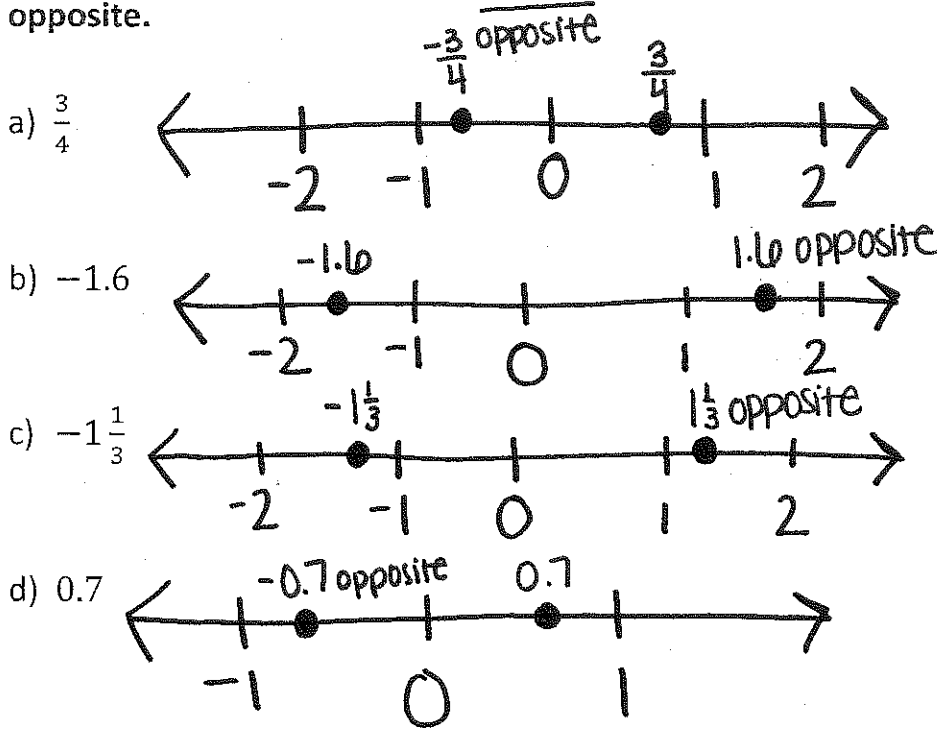


6.3 Comparing and Ordering Rational Numbers Notes

Construct a number line using integers, and then graph each rational number and its opposite.



Comparing fractions and mixed numbers:

- When comparing fractions and mixed numbers, we find common denominators.
- The number that is farther to the right is greater.

Complete the statement using < or >.

a) $-\frac{1}{2} > -\frac{3}{4}$

$-\frac{1 \times 2}{2 \times 2} = -\frac{2}{4}$

b) $4\frac{5}{6} > 4\frac{1}{6}$

already have common denominators

c) $-\frac{5}{8} < \frac{3}{8}$

↑ positive

d) $-\frac{5}{6} < -\frac{4}{7}$

$-\frac{5 \times 7}{6 \times 7} = -\frac{35}{42}$

$-\frac{4 \times 6}{7 \times 6} = -\frac{24}{42}$

e) $-2\frac{2}{3} < -2\frac{4}{9}$

↑ $-2\frac{2 \times 3}{3 \times 3} = -2\frac{6}{9}$

f) $-1\frac{3}{5} > -2\frac{3}{5}$

Comparing decimals:

- When comparing decimals, we add trailing zeros to have the same number of decimal places.
- The number that is farther to the right is greater.

Complete the statement using < or >.

g) $4.\underline{02} < 4.\underline{20}$

$$\begin{array}{r} 4.\underline{02} \\ 4.\underline{20} \end{array}$$

h) $-3.\underline{08} > -3.\underline{80}$

$-3.08 \rightarrow$ closer to zero, further to the right

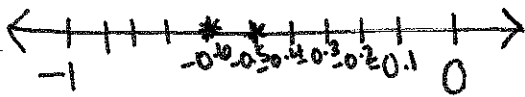
i) $0.3 > -1.2$

\uparrow positive

j) $-0.5 > -0.6$

k) $-6.5 > -7.5$

l) $-3.\underline{40} > -3.\underline{49}$



Order the numbers from least to greatest.

$-2\frac{3}{10}, -2\frac{2}{5}, -2, -2\frac{1}{2}, -3, -2\frac{1}{2}, -2\frac{2}{5}, -2\frac{3}{10}, -2$
 $-2\frac{4}{10}, -2\frac{5}{10}, -2\frac{2 \times 2}{5 \times 2}, -2\frac{4}{10}, -2\frac{1 \times 5}{2 \times 5}, -2\frac{5}{10}$ CD=10

$-\frac{1}{20}, -\frac{5}{8}, 0, -1, -\frac{3}{4}, -\frac{5}{8}, -\frac{1}{20}, 0$
 $-\frac{2}{40}, -\frac{25}{40}, -\frac{30}{40}$ CD=40
 $-\frac{1 \times 2}{20 \times 2}, -\frac{2}{40}, -\frac{5 \times 5}{8 \times 5}, -\frac{25}{40}, -\frac{3 \times 10}{4 \times 10}, -\frac{30}{40}$

$1.3, -2, -1.8, 0, -1.75, -2, -1.8, -1.75, 0, 1.3$
 $1.30, -2.00, -1.80, -1.75,$

$-4, -4.35, -4.9, -5, -4.3, -5, -4.9, -4.35, -4.3, -4$
 $-4.90, -4.30$

$-\frac{1}{2}, -0.75, -2, \frac{1}{10}, -0.9, -2, -0.9, -0.75, \frac{1}{2}, \frac{1}{10}$
 $-0.50, 0.10, -0.90$