

## Lesson 14: Fraction Comparison Problems

- Let's solve different kinds of fraction comparison problems.

### Warm-up: Number Talk: Multiples of Ten

Find the value of each expression mentally.

- $119 + 119$

- $139 + 139$

- $159 + 159$

- $199 + 199$

## 14.1: Mystery Fractions

Six friends are each given a list of 5 fractions. They each chose one fraction quietly and wrote clues about their choice. Use their clues to identify the fractions they chose.

Andre: $\frac{8}{12}$ $\frac{3}{6}$ $\frac{3}{4}$ $\frac{3}{2}$ $\frac{2}{12}$
<ul style="list-style-type: none"> <li>• less than 1</li> <li>• greater than <math>\frac{1}{3}</math></li> <li>• less than <math>\frac{2}{3}</math></li> </ul>

Tyler: $\frac{2}{6}$ $\frac{2}{2}$ $\frac{2}{4}$ $\frac{2}{3}$ $\frac{2}{5}$
<ul style="list-style-type: none"> <li>• greater than <math>\frac{1}{3}</math></li> <li>• less than 1</li> <li>• less than <math>\frac{1}{2}</math></li> </ul>

Clare: $\frac{4}{3}$ $\frac{4}{2}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{2}{10}$
<ul style="list-style-type: none"> <li>• greater than <math>\frac{2}{8}</math></li> <li>• less than <math>\frac{11}{6}</math></li> <li>• greater than 1</li> </ul>

Diego: $\frac{2}{8}$ $\frac{6}{12}$ $\frac{6}{8}$ $\frac{12}{10}$ $\frac{11}{12}$
<ul style="list-style-type: none"> <li>• greater than <math>\frac{1}{2}</math></li> <li>• less than 1</li> <li>• greater than <math>\frac{3}{4}</math></li> </ul>

Elena: $\frac{2}{12}$ $\frac{50}{100}$ $\frac{4}{10}$ $\frac{3}{5}$ $\frac{7}{5}$
<ul style="list-style-type: none"> <li>• greater than <math>\frac{2}{10}</math></li> <li>• less than 1</li> <li>• greater than <math>\frac{3}{6}</math></li> </ul>

Noah: $\frac{18}{10}$ $\frac{7}{8}$ $\frac{2}{5}$ $\frac{18}{5}$ $\frac{150}{100}$
<ul style="list-style-type: none"> <li>• greater than <math>\frac{1}{2}</math></li> <li>• less than <math>\frac{25}{10}</math></li> <li>• greater than <math>\frac{8}{5}</math></li> </ul>

## 14.2: Distances on Foot

In China and some East Asian countries, the unit “li” is used for measuring distance.

Here are the walking distances between the home of a student in China and the places he visits regularly.

- school:  $\frac{7}{5}$  li
- market:  $\frac{7}{4}$  li
- library:  $\frac{23}{10}$  li
- badminton club:  $\frac{23}{12}$  li



1. Which is a shorter distance from the student’s home:

- a. His school or the library?
- b. The market or the badminton club?
- c. The library or the market?

2. A student in America walks  $\frac{4}{5}$  kilometer (km) to school. These number lines show how 1 kilometer compares to 1 li.



Which student walks a longer distance to school? Use the number lines to show your reasoning.

3. Explain why we can’t just compare the fractions  $\frac{4}{5}$  and  $\frac{7}{5}$  to see which student walks a longer distance.

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