Assignment

Write
Describe a way to compare two positive rational numbers that are not written in the same form.

Remember
A positive rational number is a number that can be written in the form \( \frac{a}{b} \), where \( a \) and \( b \) are both whole numbers, and \( b \) is not equal to 0.

An inequality is a statement that one number is less than or greater than another number.

Practice
Order the rational numbers in each group from least to greatest.
1. 0.09, 0.1, \( \frac{2}{25} \)
2. \( \frac{5}{6} \), \( \frac{3}{8} \), \( \frac{3}{2} \)
3. 0.55, \( \frac{2}{3} \), \( \frac{3}{4} \)
4. 4.2, 3.10, 4\( \frac{1}{5} \), 3.01, 2.3, 2\( \frac{4}{5} \), 3.017
5. 6.84, 6\( \frac{1}{2} \), 6.34, 6\( \frac{1}{2} \), 6\( \frac{3}{10} \), 6.15
6. 1.98, 0.23, 0, 1.89, 1\( \frac{1}{3} \), 1.02, \( \frac{3}{2} \)
7. 2.35, 2.54, 2.01
8. 9.3, 5\( \frac{1}{3} \), 9.90, 9\( \frac{8}{11} \), 3.78, 3.9, 5\( \frac{1}{5} \)
9. 0.02, 0, 6.98, 2\( \frac{1}{16} \), 2.2, 6.89, 2.01

Stretch
Use reasoning to compare the fractions. Do not use common denominators.

Explain your reasoning.
1. \( \frac{13}{3} \) \( > \) \( \frac{17}{4} \)
2. \( \frac{3}{16} \) \( < \) \( \frac{4}{31} \)
3. \( \frac{7}{11} \) \( < \) \( \frac{9}{13} \)

Assignment Answers
Write
Sample answer.
To compare a decimal and a fraction, I can first convert the decimal to a fraction with a denominator that is a power of ten. Then I can compare the fractions using equivalent fractions.

Practice
1. \( \frac{2}{25} \), 0.09, 0.1
2. \( \frac{5}{8} \), \( \frac{5}{6} \), \( \frac{3}{2} \)
3. 0.55, \( \frac{3}{5} \), \( \frac{2}{3} \)
4. 2.3, 2\( \frac{4}{5} \), 3.01, 3.017, 3.10, 4\( \frac{1}{8} \), 4.2
5. 6\( \frac{1}{4} \), 6.34, 6.84, 8.15, 8\( \frac{3}{10} \), 8\( \frac{5}{7} \)
6. 0, 0.23, 1.02, \( \frac{3}{2} \), \( \frac{13}{5} \), 1.89, 1.98
7. 2.01, 2.35, 2.54
8. 3.78, 3.9, 5\( \frac{1}{6} \), 5\( \frac{3}{9} \), 9.3, 9\( \frac{8}{11} \), 9.90
9. 0, 0.02, 2.01, 2\( \frac{1}{16} \), 2.2, 6.89, 6.98

Stretch
1. \( \frac{13}{3} \) \( > \) \( \frac{17}{4} \)
2. \( \frac{3}{16} \) \( < \) \( \frac{6}{31} \)
3. \( \frac{7}{11} \) \( < \) \( \frac{9}{13} \)
Assignment Answers

Review

1. 63 seconds
2. The greatest number of bags that they can make and use all of the beads with the same number in each bag is 6.
3a. $\frac{19}{24}$
3b. $\frac{13}{42}$

Review

1. In a video game, a character needs to shine a light through two spinning wheels that have holes in them. The first wheel makes a complete rotation in 7 seconds. The second wheel makes a complete rotation in 9 seconds. The holes are lined up at 0 seconds. How many seconds will pass before they are lined up again?
2. Your aunt’s club is planning to sell small bags of different types of beads to people who want to make their own bead jewelry. The table below lists the different types of beads and how many they have.

<table>
<thead>
<tr>
<th>Type of Bead</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oval bead</td>
<td>24</td>
</tr>
<tr>
<td>Metal bead</td>
<td>18</td>
</tr>
</tbody>
</table>

The club wants to divide these beads into bags so that each bag has exactly the same number of oval beads and metal beads. What is the greatest number of bags that they can make so that all of the beads are used and there is the same number of each bead in each bag?
3. Determine each sum or difference.
   a. $\frac{1}{8} + \frac{2}{3}$
   b. $\frac{7}{6} - \frac{6}{7}$