Warm up Grade 6

Date: _____

Chapter 5

Lesson 3 Day 2

#1)Place the numbers in each set on a number line. Show work

List the numbers from least to greatest

a) $\frac{9}{4}$, $\frac{17}{12}$, $2\frac{3}{24}$

$2\frac{1}{4}$ $1\frac{5}{12}$ $2\frac{3}{24}$

Smallest

Compare fractional part

→ Make common Denom

$\frac{1}{4} \times \frac{6}{6} = \frac{6}{24}$ to $\frac{3}{24}$

$\frac{17}{12} > 2\frac{3}{24} > \frac{9}{4}$

Let's look at making Common denominators to compare

-bottom number need to be the same

-So need to make equivalent fractions

$\frac{7}{12}$ $\frac{3}{4}$ $\frac{5}{6}$ ⟵ Need to find the Lowest common multiple of 12, 4, 6

List the multiples (count by)

12 → 12, 24, 36, 48, ...

4 → 4, 8, 12, 16, ...

6 → 6, 12, 18, ...

circle the lowest common

That is the common denominator

Rewrite each fraction above as an equivalent fraction with the LCD

$\frac{7}{12}$

$\frac{3}{4} = \frac{9}{12}$ (×3)

$\frac{5}{6} = \frac{10}{12}$ (×2)

Then compare numerators when the denominators are the same.
The larger the numerator the larger the factor

Recall

When comparing fractions of different denominators...

-Take all fractions to the same form
(all mixed or all improper)

Then there is 3 methods to choose from

1) Benchmarks (0, $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and so on)

2) Use multiple number lines of same lengths

3) Equivalent Fractions (Find common denominators and compare numerators)

Recall

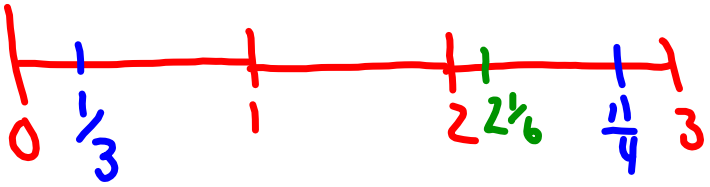
Strategy #1 – USING BENCHMARKS AND ESTIMATION

place the following on a number line

$\frac{11}{4}$, $\frac{1}{3}$, $2\frac{1}{6}$ $2\frac{2}{12}$

$2\frac{3}{4}$ $2\frac{9}{12}$

between 0 and 1 close to zero

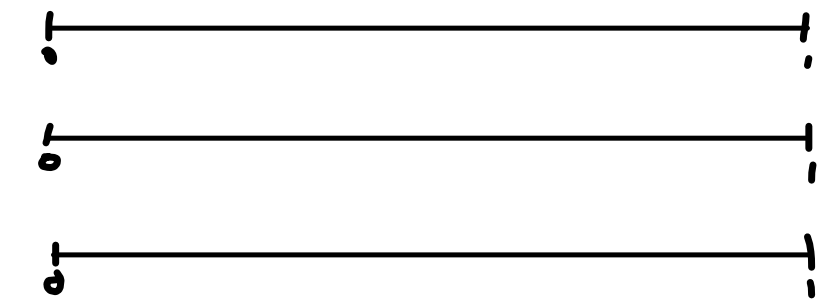


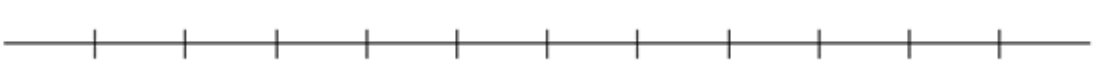
Recall

Strategy #2 – DRAWING INDIVIDUAL NUMBER LINES OF EQUAL LENGHTS

place the following on multiple a number line

$$\frac{3}{4}, \quad \frac{5}{8}, \quad \frac{1}{3}$$





Common denominators

can help compare

(See notes from Tuesday)

Which fraction is larger?

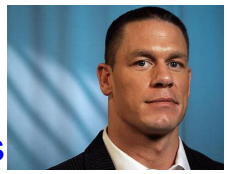
$2\frac{4}{5} = 2\frac{8}{10} > 2\frac{7}{10}$

(×2 under 5, ×2 above 10)

When whole #s are the same just compare fraction part.

5, 10, 15, 20

John says that $3\frac{2}{5}$ is greater than $\frac{21}{6}$



Explain how you know with pictures, number lines or words

$\frac{21}{6} = 3\frac{3}{6} > 3\frac{2}{5}$

$\frac{3}{6} = \frac{15}{30}$ (×5, ×5) Bigger $\frac{2}{5} = \frac{12}{30}$ (×6, ×6)

List multiples of Denominators (circle common)

6→ 6, 12, 18, 24, 30, 36, 42...

5→ 5, 10, 15, 20, 25, 30

↘ new denominator for Both

John is wrong $\frac{21}{6}$ is greater than $3\frac{2}{5}$.

Practice

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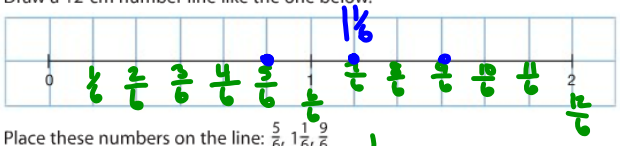
Your teacher will give you copies of number lines for questions 3, 6, and 7.

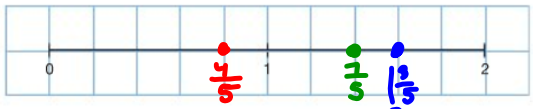
1. Use 1-cm grid paper.
Draw a 12-cm number line like the one below.



Place these numbers on the line: $\frac{5}{6}$, $1\frac{1}{6}$, $\frac{9}{6}$

denominator → all same
→ whole is cut in to

2. Use 1-cm grid paper.
Draw a 10-cm number line like the one below.



Place these numbers on the line: $1\frac{3}{5}$, $\frac{7}{5}$, $\frac{4}{5}$

3. Find equivalent fractions so the fractions in each pair have the same denominator.
~~Place each pair of fractions on a number line.~~

a) $\frac{8}{3}$ and $\frac{6}{4}$
b) $\frac{12}{5}$ and $\frac{8}{3}$
c) $\frac{14}{6}$ and $\frac{17}{8}$
d) $\frac{11}{10}$ and $\frac{20}{15}$
e) $\frac{9}{5}$ and $\frac{8}{6}$
f) $\frac{12}{9}$ and $\frac{11}{5}$

b) c)

3a) $\frac{8}{3} \times \frac{4}{4} = \frac{32}{12}$ $\frac{6}{4} \times \frac{3}{3} = \frac{18}{12}$

List Multiple
3 → 3, 6, 9, 12, 15 ...
4 → 4, 8, 12

4. Use 1-cm grid paper.
Draw a number line with the benchmarks 0, 1, 2, and 3 as shown below.

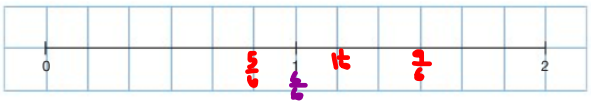
Place these numbers on the number line:
$\frac{1}{2}$, $\frac{23}{8}$, $1\frac{3}{4}$

Practice

Page 173-175

Your teacher will give you copies of number lines for questions 3, 6, and 7.

1. Use 1-cm grid paper.
Draw a 12-cm number line like the one below.



Place these numbers on the line: $\frac{5}{6}$, $1\frac{1}{6}$, $\frac{9}{6}$

2. Use 1-cm grid paper.
Draw a 10-cm number line like the one below.

Place these numbers on the line: $1\frac{3}{5}$, $\frac{7}{5}$, $\frac{4}{5}$

3. Find equivalent fractions so the fractions in each pair have the same denominator.
Place each pair of fractions on a number line.

a) $\frac{8}{3}$ and $\frac{6}{4}$
b) $\frac{12}{5}$ and $\frac{8}{3}$
c) $\frac{14}{6}$ and $\frac{17}{8}$
d) $\frac{11}{10}$ and $\frac{20}{15}$
e) $\frac{9}{5}$ and $\frac{8}{6}$
f) $\frac{12}{9}$ and $\frac{11}{5}$

a) $\frac{8}{3} = \frac{32}{12}$ $\quad \frac{6}{4} = \frac{18}{12}$

b) $\frac{12}{5} = \frac{36}{15}$ $\quad \frac{8}{3} = \frac{40}{15}$

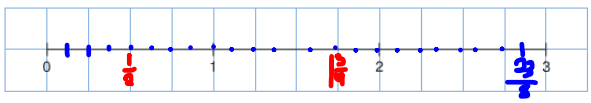
c) $\frac{14}{6} = \frac{56}{24}$ $\quad \frac{17}{8} = \frac{51}{24}$

d) $\frac{11}{10} = \frac{33}{30}$ $\quad \frac{20}{15} = \frac{40}{30}$

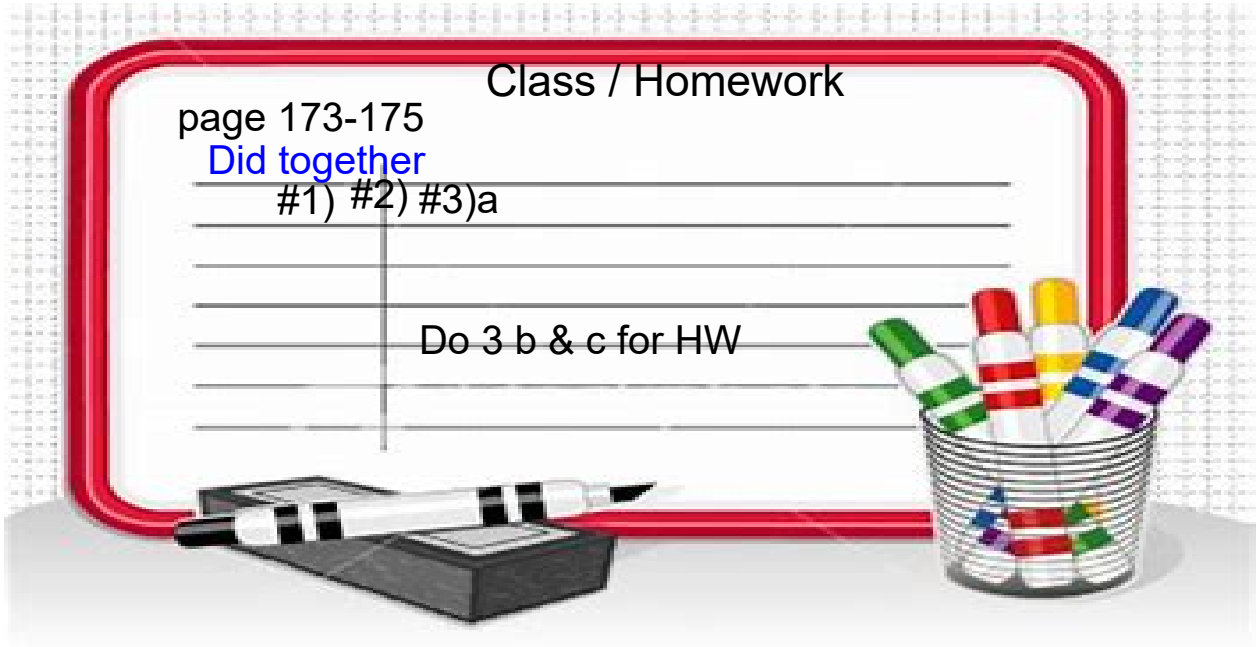
e) $\frac{9}{5} = \frac{54}{30}$ $\quad \frac{8}{6} = \frac{40}{30}$

f) $\frac{12}{9} = \frac{60}{45}$ $\quad \frac{11}{5} = \frac{99}{5}$

4. Use 1-cm grid paper.
Draw a number line with the benchmarks 0, 1, 2, and 3 as shown below.

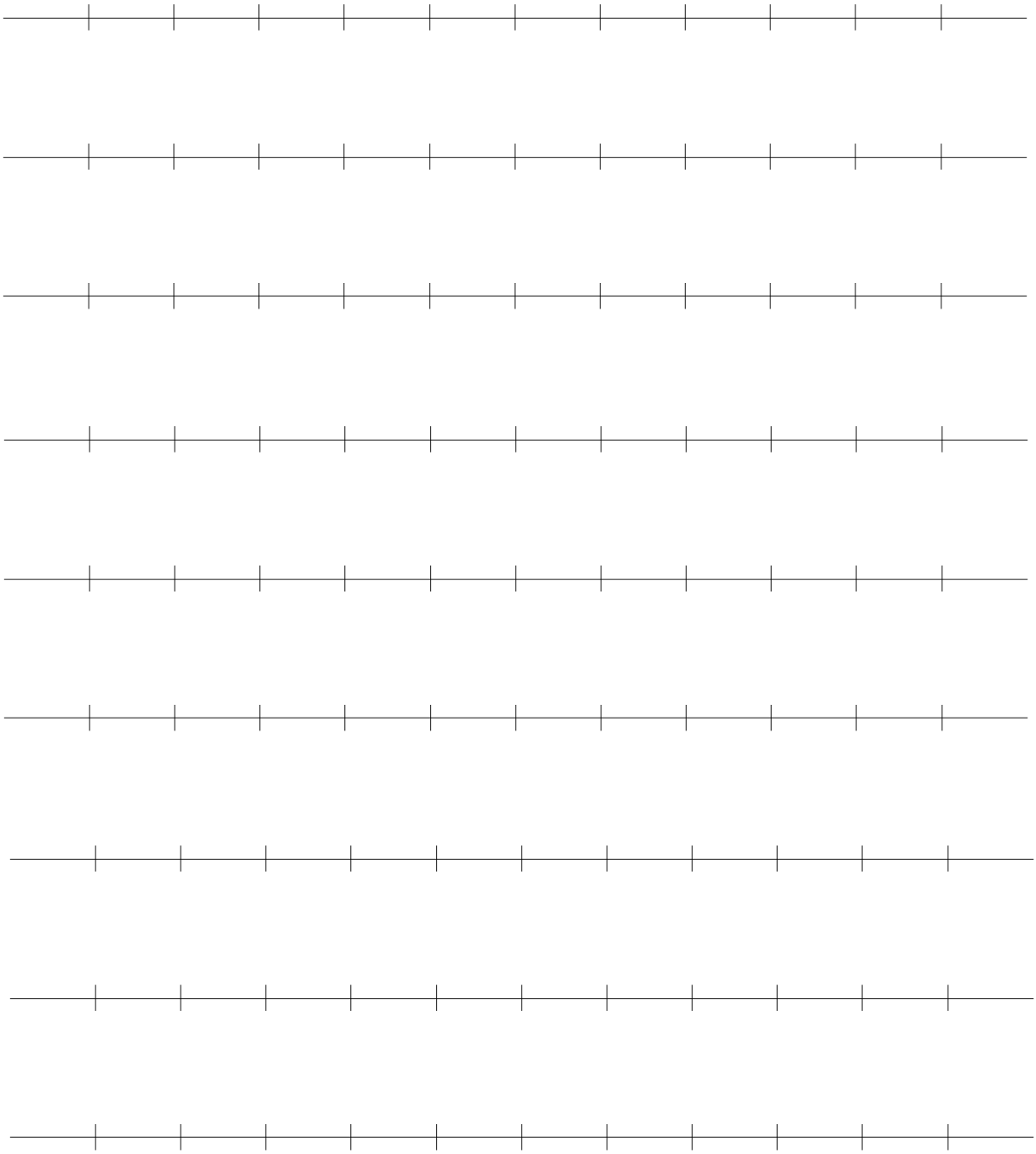


Place these numbers on the number line:
$\frac{1}{2}$, $\frac{23}{8}$, $1\frac{3}{4}$



Number lines PDF

Number lines Copy for Students



Practice

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Your teacher will give you copies of number lines for questions 3, 6, and 7.

1. Use 1-cm grid paper.
Draw a 12-cm number line like the one below.

Place these numbers on the line: $\frac{5}{6}$, $1\frac{1}{6}$, $\frac{9}{6}$

2. Use 1-cm grid paper.
Draw a 10-cm number line like the one below.

Place these numbers on the line: $1\frac{3}{5}$, $\frac{7}{5}$, $\frac{4}{5}$

3. Find equivalent fractions so the fractions in each pair have the same denominator.
Place each pair of fractions on a number line.

a) $\frac{8}{3}$ and $\frac{6}{4}$
b) $\frac{12}{5}$ and $\frac{8}{3}$
c) $\frac{14}{6}$ and $\frac{17}{8}$
d) $\frac{11}{10}$ and $\frac{20}{15}$
e) $\frac{9}{5}$ and $\frac{8}{6}$
f) $\frac{12}{9}$ and $\frac{11}{5}$

4. Use 1-cm grid paper.
Draw a number line with the benchmarks 0, 1, 2, and 3 as shown below.

Place these numbers on the number line:
$\frac{1}{2}$, $\frac{23}{8}$, $1\frac{3}{4}$

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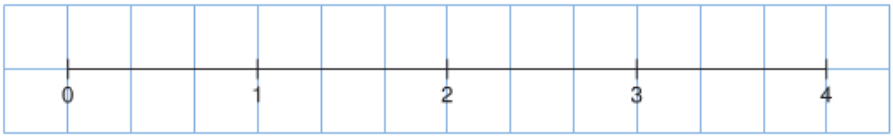
5. Use 1-cm grid paper.
Draw a number line with the benchmarks 0, 1, 2, 3, and 4 as shown below.



Place these numbers on the number line:
$\frac{5}{2}$, $\frac{2}{3}$, $1\frac{5}{6}$

6. For each pair of numbers below:
- Place the two numbers on a number line.
  Which strategy did you use?
- Which of the two numbers is greater?
  How do you know?

a) $\frac{5}{8}$; $\frac{7}{16}$ b) $\frac{3}{4}$; $\frac{9}{12}$ c) $2\frac{1}{2}$; $\frac{9}{2}$
d) $\frac{13}{10}$; $1\frac{1}{5}$ e) $\frac{29}{5}$; $6\frac{2}{10}$ f) $3\frac{5}{6}$; $3\frac{8}{12}$

7. Place the numbers in each set on a number line.
Show how you did it.
List the numbers from least to greatest.

a) $\frac{5}{6}$, $\frac{15}{9}$, $1\frac{5}{12}$ b) $\frac{9}{4}$, $2\frac{2}{3}$, $\frac{11}{6}$ c) $\frac{9}{10}$, $\frac{7}{5}$, $\frac{11}{4}$ d) $\frac{10}{3}$, $2\frac{1}{4}$, $\frac{3}{2}$

8. Hisa says that $\frac{17}{3}$ is greater than $5\frac{3}{4}$. Is she correct?
Use pictures, numbers, and words to explain.

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9. Adriel watched a $1\frac{3}{4}$-h movie on TV.
Nadir watched 3 half-hour sitcoms.
Who watched more TV? How do you know?

10. Justine played a board game for $3\frac{1}{2}$ h.
Marty played the same board game for $\frac{37}{12}$ h.
Who played longer?
Sketch a number line to show how you know you are correct.

11. Ratu, Addie, and Penny cooked pancakes for their school's maple syrup festival in McCreary, Manitoba.
Ratu made $4\frac{1}{2}$ dozen pancakes,
Addie made $\frac{28}{6}$ dozen pancakes,
and Penny made $\frac{13}{3}$ dozen pancakes.
Who made the most pancakes?
Who made the least?
Sketch a number line to show how you know.

12. Florence and her friends Rafael and Bruno race model cars.
Florence's car completed $2\frac{1}{4}$ laps of a track in 1 min.
Rafael's car completed $\frac{8}{3}$ laps of the track in 1 min.
Bruno's car completed $\frac{11}{12}$ laps of the track in 1 min.
Whose car was fastest? How do you know?

TIP

13. Use your ruler as a number line.
Visualize placing these fractions on your ruler: $4\frac{3}{5}, \frac{11}{2}, \frac{83}{10}$
Describe where you would place each fraction.
Which fraction is the greatest? The least?