

Warm Up Grade 7  
December 1, 2017



1) Write each fraction as a decimal (without calculator)

a)  $\frac{7}{5} = \frac{14}{10} = 1\frac{4}{10} = 1.4$   
 b)  $\frac{2}{25} = \frac{8}{100} = 0.08$

2) Write the following decimals as a fraction

a)  $0.056 = \frac{56}{1000}$   
 Reduce to lowest =  $\frac{28}{500} = \frac{14}{250} = \frac{7}{125}$

b)  $0.\overline{78} = \frac{78}{99} = \frac{26}{33}$

c)  $0.\overline{2} = \frac{2}{9}$

d)  $0.\overline{006} = \frac{6}{1000} = \frac{3}{500}$

3) Write an equivalent fraction with a denominator of 10, 100 or 1000. Then rewrite as a decimal.

a)  $\frac{4}{5} = \frac{8}{10} = 0.8$

b)  $\frac{10}{25} = \frac{40}{100} = 0.40$

c)  $\frac{6}{200} = \frac{30}{1000} = 0.030$

$\frac{6}{200} = \frac{3}{100}$

Grade 8 Unit 3: Fraction Day 1

Homework

Sheet 137

Solutions

1) For each fraction, write an equivalent fraction with denominator 10, 100, or 1000. Then, write the fraction as a decimal.

$$\text{a) } \frac{4}{5} \stackrel{\times 2}{=} \frac{8}{10} = 0.8$$

$$\text{b) } \frac{3}{50} \stackrel{\times 2}{=} \frac{6}{100} = 0.06$$

$$\text{c) } \frac{7}{20} \stackrel{\times 5}{=} \frac{35}{100} = 0.35$$

$$\text{d) } \frac{19}{200} \stackrel{\times 5}{=} \frac{95}{1000} = 0.095$$

2) Use Equivalent Fractions to order the fractions from least to greatest

$$\begin{array}{cccccc} \frac{2}{3} & , & \frac{1}{2} & , & \frac{7}{24} & , & \frac{1}{12} & , & \frac{11}{12} \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow \\ \frac{16}{24} & & \frac{12}{24} & & \frac{7}{24} & & \frac{2}{24} & & \frac{22}{24} \end{array}$$

The fraction now with the largest numerator is the biggest

$$\frac{1}{12}, \frac{7}{24}, \frac{1}{2}, \frac{2}{3}, \frac{11}{12}$$

Sheet 137

Homework  
Solutions

3 a)  $\frac{2^{x3}}{3^{x3}} = \frac{6}{9}$

b)  $\frac{3^{x4}}{4^{x4}} = \frac{12}{16}$

c)  $\frac{12 \div 2}{10 \div 2} = \frac{6}{5}$

d)  $\frac{30 \div 2}{40 \div 2} = \frac{15}{20}$

e)  $\frac{5}{5} = \frac{15}{15}$

f)  $\frac{15 \div 5}{10 \div 5} = \frac{3}{2}$

4 a)  $\frac{1}{2}$   $\frac{1 \times 2}{2 \times 2} = \frac{2}{4}$ ,  $\frac{1 \times 4}{2 \times 4} = \frac{4}{8}$ ,  $\frac{1 \times 5}{2 \times 5} = \frac{5}{10}$

b)  $\frac{3}{4}$   $\frac{3 \times 2}{4 \times 2} = \frac{6}{8}$ ,  $\frac{3 \times 25}{4 \times 25} = \frac{75}{100}$ ,  $\frac{3 \times 4}{4 \times 4} = \frac{12}{16}$

c)  $\frac{7}{5}$   $\frac{7 \times 2}{5 \times 2} = \frac{14}{10}$ ,  $\frac{7 \times 4}{5 \times 4} = \frac{28}{20}$ ,  $\frac{7 \times 5}{5 \times 5} = \frac{35}{25}$

d)  $\frac{1}{3}$   $\frac{1 \times 2}{3 \times 2} = \frac{2}{6}$ ,  $\frac{1 \times 5}{3 \times 5} = \frac{5}{15}$ ,  $\frac{1 \times 6}{3 \times 6} = \frac{6}{18}$

e)  $\frac{3}{10}$   $\frac{3}{30}$ ,  $\frac{6}{20}$ ,  $\frac{30}{100}$

f)  $\frac{4}{1}$   $\frac{8}{2}$ ,  $\frac{24}{6}$ ,  $\frac{12}{3}$

g)  $\frac{2}{5}$   $\frac{4}{10}$ ,  $\frac{6}{15}$ ,  $\frac{8}{20}$

h)  $\frac{4}{3}$   $\frac{8}{6}$ ,  $\frac{12}{9}$ ,  $\frac{16}{12}$

## 5. Lowest terms

Homework

Solutions

$$a) \frac{3}{12} \begin{array}{l} \div 3 \\ \div 3 \end{array} = \frac{1}{4}$$

$$b) \frac{8}{20} \begin{array}{l} \div 4 \\ \div 4 \end{array} = \frac{2}{5}$$

$$c) \frac{6}{16} \begin{array}{l} \div 2 \\ \div 2 \end{array} = \frac{3}{8}$$

$$d) \frac{12}{64} \begin{array}{l} \div 4 \\ \div 4 \end{array} = \frac{3}{16}$$

$$e) \frac{24}{80} \begin{array}{l} \div 2 \\ \div 2 \end{array} = \frac{12}{40} \begin{array}{l} \div 2 \\ \div 2 \end{array} = \frac{6}{20} \begin{array}{l} \div 2 \\ \div 2 \end{array} = \frac{3}{10} \quad \text{or} \quad \frac{24 \div 8}{80 \div 8} = \frac{3}{10}$$

$$f) \frac{15}{48} \begin{array}{l} \div 3 \\ \div 3 \end{array} = \frac{5}{16}$$

$$g) \frac{10}{5} \begin{array}{l} \div 5 \\ \div 5 \end{array} = \frac{2}{1}$$

$$h) \frac{75}{100} \begin{array}{l} \div 5 \\ \div 5 \end{array} = \frac{15}{20} \begin{array}{l} \div 5 \\ \div 5 \end{array} = \frac{3}{4}$$

$$\frac{75 \div 5}{100 \div 25} = \frac{15 \div 5}{20 \div 5} = \frac{3}{4}$$

Homework  
Solutions

$$\frac{48 \div 2}{60 \div 2} = \frac{24 \div 6}{30 \div 6} = \frac{4}{5}$$

$$\frac{48 \div 12}{60 \div 12} = \frac{4}{5}$$

b. 32 students , 12 do not like pizza  
so 20 like pizza

$$\text{Fraction } \frac{20}{32} \begin{array}{l} \div 4 \\ \div 4 \end{array} = \frac{5}{8}$$

Homework  
Solutions

7. a) 4 eggs as a fraction  
of a dozen

$$\frac{4}{12} = \frac{1}{3}$$

b) 15 min as a fraction  
of an hour

$$\frac{15}{60} = \frac{1}{4}$$

c) 25¢ as a fraction  
of a dollar

$$\frac{25}{100} = \frac{5}{20} = \frac{1}{4}$$

Homework  
Solutions

8a)  $\frac{5}{8} = \frac{20}{32}$

b)  $\frac{9}{16} = \frac{36}{64}$

c)  $\frac{1}{2} = \frac{15}{30}$

d)  $\frac{3}{4} = \frac{9}{12}$

e)  $\frac{1}{9} = \frac{21}{27}$

f)  $\frac{20}{24} = \frac{5}{6}$

g)  $\frac{3}{9} = \frac{12}{36}$

h)  $\frac{7}{8} = \frac{42}{48}$

i)  $\frac{2}{3} = \frac{10}{15}$

j)  $\frac{6}{8} = \frac{12}{16}$

k)  $\frac{5}{100} = \frac{1}{20}$

l)  $\frac{45}{300} = \frac{15}{100}$

m)  $\frac{2}{1} = \frac{32}{16}$

n)  $\frac{8}{4} = \frac{4}{2}$

o)  $\frac{5}{6} = \frac{20}{24}$

p)  $\frac{1}{2} = \frac{10}{20}$

q)  $\frac{6}{6} = \frac{36}{36}$

r)  $\frac{3}{40} = \frac{15}{200}$

s)  $\frac{3}{8} = \frac{30}{80}$

t)  $\frac{4}{16} = \frac{2}{8}$

u)  $\frac{7}{1} = \frac{21}{3}$

v)  $\frac{8}{14} = \frac{48}{84}$

w)  $\frac{5}{50} = \frac{10}{100}$

x)  $\frac{2}{21} = \frac{6}{63}$

GREAT! You FIGURED IT OUT.

## Comparing and Ordering Fractions

There are several strategies you can use to compare fractions.

1. Use common denominators    Ex)  $\frac{1}{2}$     $\frac{3}{2}$

With common denominators, the fraction with the larger numerator is greater

2. Use common numerators    Ex)  $\frac{3}{4}$     $\frac{3}{7}$

When fractions have the same numerators, the fraction with the smaller denominator is greater because it has bigger pieces.

3. Use benchmarks ( 0,  $\frac{1}{2}$ , 1)    0    $\frac{1}{4}$     $\frac{1}{2}$     $\frac{3}{4}$    1

next pages

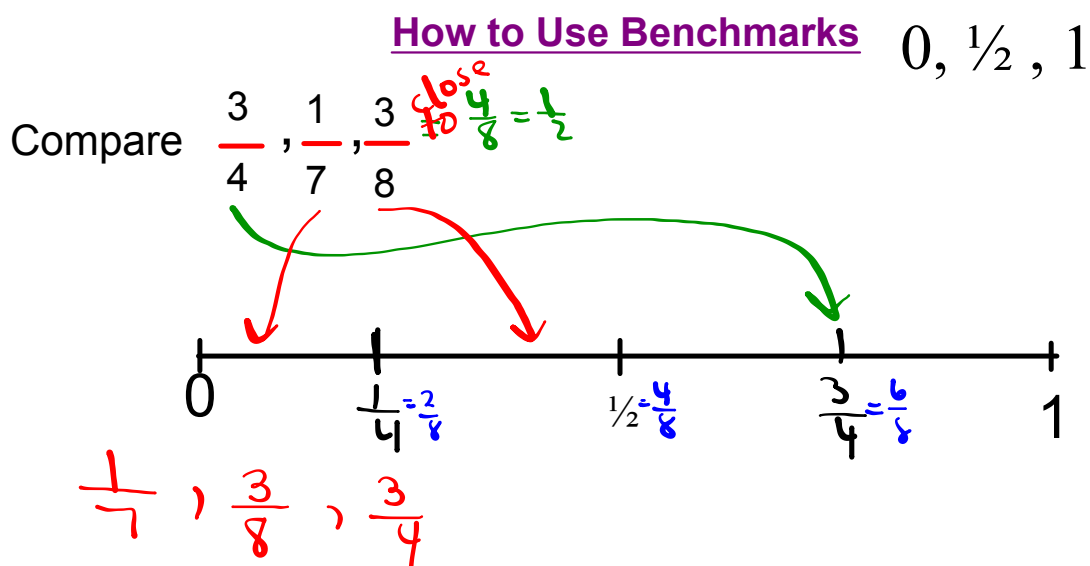
4. Use one in the difference of the numerator and denominator

$$\frac{3}{4} < \frac{6}{7}$$

With one in the difference of numerator and denominator, the bigger the number the larger the fraction.

5. Use a combination of the above





$\frac{3}{4}$  is closer to 1 because the numerator and denominator are close in value

$\frac{1}{7}$  is closer to 0 because the numerator is much less than the denominator

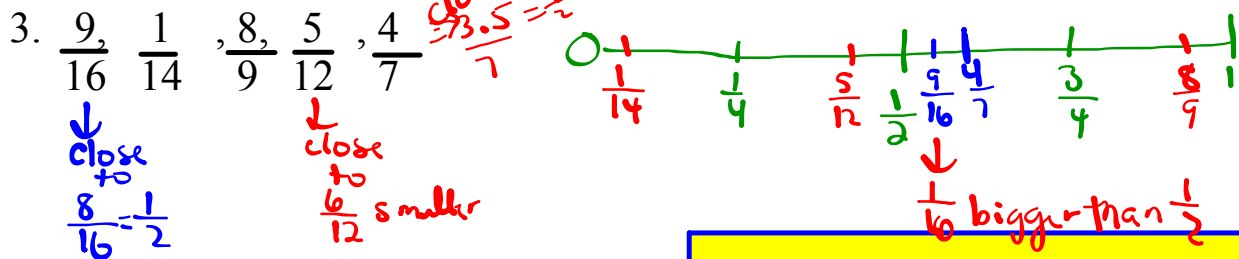
$\frac{3}{8}$  is closer to  $\frac{1}{2}$  because the numerator is about half the denominator but less than  $\frac{1}{2}$

For each example order the fractions from least to greatest.

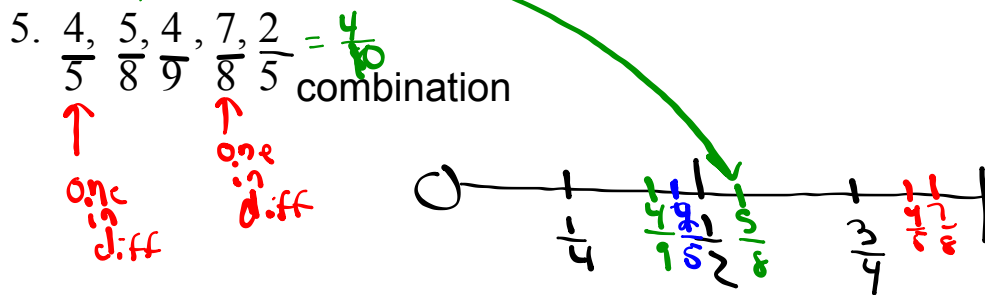
Use more than one strategy

1.  $\frac{5}{5}, \frac{1}{5}, \frac{4}{5}, \frac{2}{5}, \frac{3}{5}$  *Common denominator*  
 $\frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}$

2.  $\frac{2}{3}, \frac{2}{8}, \frac{2}{4}, \frac{2}{6}, \frac{2}{10}$  *Common numerator*  
 $\frac{2}{10}, \frac{2}{8}, \frac{2}{6}, \frac{2}{4}, \frac{2}{3}$   
*close to  $\frac{0.5}{7}$  larger than  $\frac{1}{2}$*   
 $\frac{0.5}{7} > \frac{1}{16}$



4.  $\frac{7}{8}, \frac{1}{2}, \frac{4}{5}, \frac{2}{3}, \frac{9}{10}$  *one in the difference*  
 $\frac{1}{3} > \frac{1}{10}$   
 $\frac{2}{3} < \frac{9}{10}$   
 $\frac{1}{2}, \frac{2}{3}, \frac{4}{5}, \frac{7}{8}, \frac{9}{10}$



## Comparing and Ordering Fractions

There are several strategies you can use to compare fractions.

1. Use common denominators
2. Use common numerators
3. Use benchmarks (0,  $\frac{1}{2}$ , 1)
4. Use fractions with a difference of 1 between the numerator and denominator
5. Use a combination of the above

Least  $\rightarrow$  Greatest

Examples; 1.  $\frac{5}{5}$ ,  $\frac{1}{5}$ ,  $\frac{4}{5}$ ,  $\frac{2}{5}$ ,  $\frac{3}{5}$

$\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{3}{5}$ ,  $\frac{4}{5}$ ,  $\frac{5}{5}$



You try (Put in order from least to greatest)

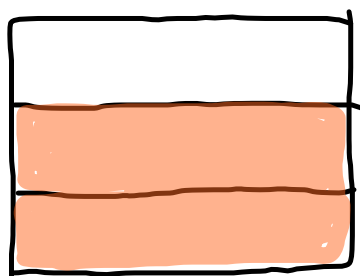
a)  $\frac{2}{3}, \frac{2}{8}, \frac{2}{4}, \frac{2}{6}, \frac{2}{10}$

b)  $\frac{7}{8}, \frac{1}{2}, \frac{4}{5}, \frac{2}{3}, \frac{9}{10}$

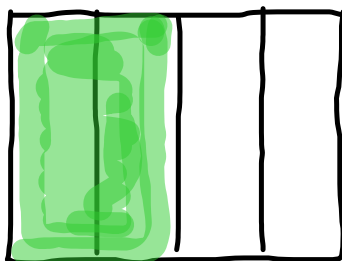
use bench mark

c)  $\frac{4}{5}, \frac{5}{8}, \frac{4}{9}, \frac{7}{8}, \frac{2}{5}$

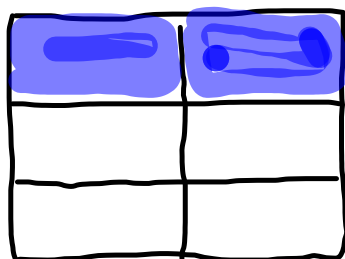
$$\frac{2}{3}, \frac{2}{8}, \frac{2}{4}, \frac{2}{6}, \frac{2}{10}$$



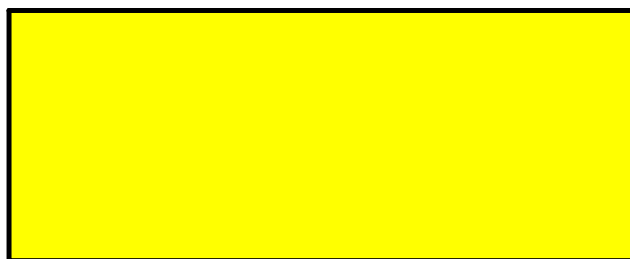
$$\frac{2}{3}$$



$$\frac{2}{4}$$



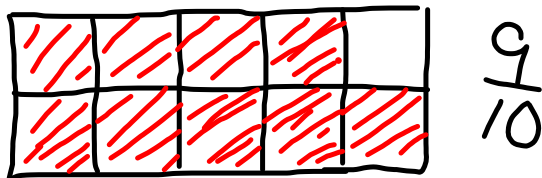
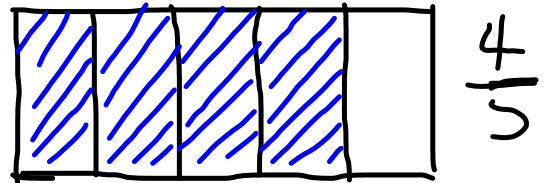
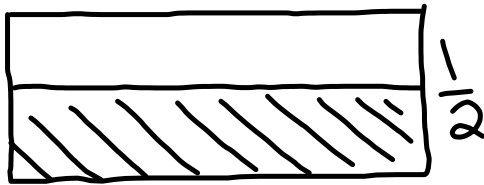
$$\frac{2}{6}$$



Least → Greatest

$$\frac{2}{10}, \frac{2}{8}, \frac{2}{6}, \frac{2}{4}, \frac{2}{3}$$

$$4 \text{ } \omega \text{ } \frac{7}{8}, \frac{1}{2}, \frac{4}{5}, \frac{2}{3}, \frac{9}{10}$$



In fractions the larger the denominator, the smaller the size of the pieces you will have. So if you are only missing one piece, (or your numerator is one less than the denominator), the fraction with the bigger denominator will be greater.

$$\frac{1}{2}, \frac{2}{3}, \frac{4}{5}, \frac{7}{8}, \frac{9}{10}$$

$$5. \frac{4}{5}, \frac{5}{8}, \frac{4}{9}, \frac{7}{8}, \frac{2}{5}$$

Least to Greatest

$$\begin{array}{l} \frac{4}{5} - \text{almost } 1 \\ \frac{7}{8} - \text{almost } 1 \\ \frac{4}{9} - \text{almost } \frac{1}{2} \\ \frac{5}{8} - \text{little more than } \frac{1}{2} \\ \frac{2}{5} \rightarrow \text{less than } \frac{1}{2} \end{array} \left. \vphantom{\begin{array}{l} \frac{4}{5} \\ \frac{7}{8} \\ \frac{4}{9} \\ \frac{5}{8} \\ \frac{2}{5} \end{array}} \right\} \frac{7}{8} \text{ is greater, missing a smaller piece}$$

$$\frac{4}{9}, \frac{2}{5} \rightarrow \frac{4}{10} \rightarrow \text{greater has bigger pieces}$$

$$\frac{2}{5}, \frac{4}{9}, \frac{5}{8}, \frac{4}{5}, \frac{7}{8}$$

Which fraction in each pair is greater?

Give one or more reasons. Try not to use drawings or models. DO NOT USE common denominators. Use the strategies we just discussed.

a.  $4/5$  or  $4/9$   $\frac{4}{5} > \frac{4}{9}$  g.  $7/12$  or  $5/12$

b.  $4/7$  or  $5/7$   $\frac{4}{7} < \frac{5}{7}$  h.  $3/5$  or  $3/7$

c.  $3/8$  or  $4/10$   $\frac{3}{8} < \frac{4}{10}$   $\frac{1}{4} > \frac{1}{2}$  i.  $5/8$  or  $6/10$   $\frac{1}{8} > \frac{1}{8}$   $\frac{1}{10} > \frac{1}{2}$

d.  $5/3$  or  $5/8$  j.  $9/8$  or  $4/3$

e.  $3/4$  or  $9/10$   $0.75$   $0.90$  k.  $4/6$  or  $7/12$

f.  $3/8$  or  $4/7$  l.  $8/9$  or  $7/8$



$$\frac{2}{3}, \frac{3}{7} \quad \text{LCM}$$

Multiples of 3 → 3, 6, 9, 12, 15, 18, 21, 24, 27, ...

Multiples of 7 → 7, 14, 21, 28, ...

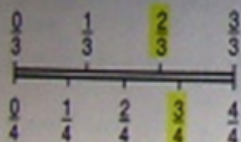
LCM 3 and 7 is 21

$$\frac{2 \times 7}{3 \times 7} = \frac{14}{21} > \frac{3 \times 3}{7 \times 3} = \frac{9}{21}$$

Box method for LCM

Lisette and Kim are the same height.  
 Lisette can jump  $\frac{2}{3}$  of her height and  
 Kim,  $\frac{3}{4}$  of her height. Who can jump higher?

Number lines can be used to compare  $\frac{2}{3}$  and  $\frac{3}{4}$ .



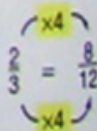
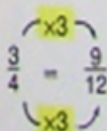
$\frac{3}{4}$  is to the right of  $\frac{2}{3}$ .  $\frac{3}{4} > \frac{2}{3}$

Fractions can also be compared if they have the same denominator.

For  $\frac{3}{4}$  and  $\frac{2}{3}$ , the LCM of the denominators is 12.

The LCM is used to write equivalent fractions.

$\frac{9}{12} > \frac{8}{12}$ , therefore  $\frac{3}{4} > \frac{2}{3}$ .



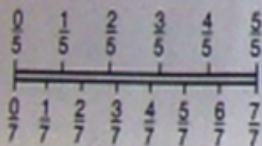
Kim can jump higher.



Front  
 #2 cd  
 3 bcd  
 Back  
 #1 ab  
 #3 acde  
 #5  
 #6b  
 #8ac  
 #9

You Try

1. Which is greater,  $\frac{4}{5}$  or  $\frac{5}{7}$ ?



2. Find the LCM of the denominators (the least common denominator).

a.  $\frac{2}{3}, \frac{1}{7}$

b.  $\frac{2}{5}, \frac{1}{2}$

c.  $\frac{1}{9}, \frac{1}{6}$

d.  $\frac{3}{4}, \frac{5}{6}$

3. Copy and use > or < to make a true statement.

a.  $\frac{3}{5} \odot \frac{2}{5}$

b.  $\frac{7}{10} \odot \frac{9}{10}$

c.  $\frac{1}{5} \odot \frac{3}{10}$

d.  $\frac{5}{8} \odot \frac{3}{4}$

e.  $\frac{1}{4} \odot \frac{1}{3}$

f.  $\frac{3}{4} \odot \frac{7}{10}$

4. Arrange from least to greatest.

a.  $\frac{3}{10}, \frac{1}{10}, \frac{9}{10}, \frac{7}{10}$

b.  $\frac{7}{9}, \frac{18}{18}, \frac{4}{9}, \frac{11}{18}, \frac{1}{18}$

c.  $\frac{1}{4}, \frac{2}{3}, \frac{1}{12}$

d.  $\frac{2}{3}, \frac{3}{4}, \frac{1}{2}, \frac{5}{6}$

e.  $\frac{11}{10}, \frac{6}{5}, \frac{9}{8}$

2d) LCM

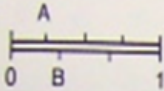
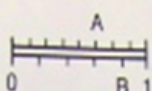
9 → 9, 18, 27, 36, 45, ...

6 → 6, 12, 18

$\frac{1 \times 2}{9 \times 2} = \frac{2}{18}$

$\frac{1 \times 3}{6 \times 3} = \frac{3}{18}$

1. What fractions do A and B represent?



a.  b. 

2. Which is the lesser fraction in each part of exercise 1?

3. Which is the greater fraction?

a.  $\frac{4}{12}, \frac{5}{12}$     b.  $\frac{3}{4}, \frac{5}{8}$     c.  $\frac{12}{5}, \frac{9}{4}$   
 d.  $\frac{7}{8}, \frac{3}{4}$     e.  $\frac{15}{10}, \frac{15}{8}$     f.  $\frac{2}{3}, \frac{7}{10}$

4. Which figure has the greater fraction of its area shaded?

a.  b. 

5. Renata and Bonnie have the same mass. Renata can lift  $\frac{4}{5}$  of her mass. Bonnie can lift  $\frac{3}{4}$  of her mass. Who can lift the greater mass?

6. Find the LCM of the denominators.

a.  $\frac{1}{2}, \frac{4}{5}, \frac{9}{10}$     b.  $\frac{7}{8}, \frac{1}{3}, \frac{5}{4}$     c.  $\frac{7}{6}, \frac{3}{8}, \frac{5}{3}$

7. Which is the least fraction?

a.  $\frac{2}{3}, \frac{5}{6}, \frac{3}{4}$     b.  $\frac{7}{8}, \frac{4}{5}, \frac{9}{10}$     c.  $\frac{7}{4}, \frac{11}{7}, \frac{3}{2}$

8. Arrange from least to greatest.

a.  $\frac{3}{4}, \frac{8}{4}, \frac{5}{4}$     b.  $\frac{1}{3}, \frac{2}{5}, \frac{1}{10}$   
 c.  $\frac{8}{5}, \frac{9}{5}, \frac{5}{5}$     d.  $\frac{9}{4}, \frac{7}{2}, 2$

9. Of the 30 students in Mrs. Paolucci's class, 3 were absent. On the same day, 2 students were absent from Mr. Clark's class of 25. Which class had the greater fraction of students present?

10. A construction company is building Phase II of a housing development. Of the 30 homes in Phase I, 11 have three bedrooms. In Phase II, 17 of the 45 homes have three bedrooms. Which phase has the greater fraction of three-bedroom homes?

11. While playing golf, Neil lost 3 of his 10 golf balls. Gabrielle lost 6 of her 15 golf balls. Which player lost the lesser fraction of golf balls?

12. The Yost family spent \$72 of their \$264 weekly income on food. The Seymours spent \$93 of their \$330 weekly income on food.

a. How much did each family spend on food in a year?  
 b. Which family spent the greater fraction of their income on food?