

February 10, 2017

Math 8



Test Tomorrow

Study similar to test

A jug holds $2\frac{2}{5}$ liters of water. A bucket holds 15 liters of water. How many small jugs can be filled from the water in the bucket?

$$15 \div 2\frac{2}{5}$$

change to improper

$$15 \div \frac{12}{5}$$

flip and multiply

Reduce as you go

$$\frac{15}{1} \times \frac{5}{12}$$

$$= \frac{25}{4}$$

$$= 6\frac{1}{4}$$

$$\frac{15}{1} \times \frac{5}{12}$$

$$= \frac{75}{12}$$

Reduce

$$= \frac{25}{4}$$

$$= 6\frac{1}{4}$$

$6\frac{1}{4}$ Jugs can be filled out of this bucket. (6 full left with $\frac{1}{4}$)

Evaluate

$$\frac{1}{2} - \frac{3}{5} \times \frac{1}{6}$$

$$\frac{1 \times 15}{2 \times 15} - \frac{3}{30}$$

$$\frac{15}{30} - \frac{3}{30}$$

$$\frac{12}{30} \div 3$$

$$\frac{4}{10} \div 2$$

$$= \boxed{\frac{2}{5}}$$

OR Reduce
fractions
ways

$$\frac{1}{2} - \frac{3}{5} \times \frac{1}{6}$$

$$\frac{1}{2} - \frac{1}{10}$$

$$\frac{5}{10} - \frac{1}{10}$$

$$\frac{4}{10} \div 2$$

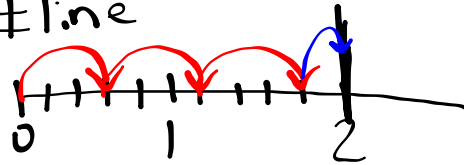
$$\frac{2}{5}$$

Does it
Reduce

Use a diagram to find

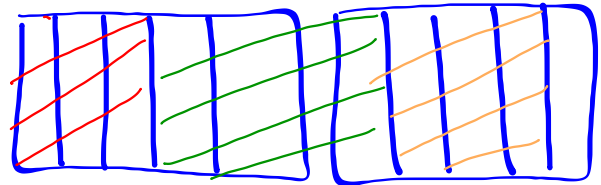
$$2 \div \frac{3}{5}$$

#line



3 full jumps of size 3
1 dash out of 3 left

$$\boxed{3 \frac{1}{3}}$$



3 different colors
1 block out of 3 left

$$3 \frac{1}{3}$$

check

$$2 \div \frac{3}{5}$$

$$2 \times \frac{5}{3}$$

$$\frac{10}{3}$$

$$3 \frac{1}{3}$$

pg 155

$$7a) \frac{1}{8} \times \frac{3}{4} \times \frac{7}{5} \div \frac{7}{10}$$

$$\frac{3}{32} \times \frac{7}{5} \div \frac{7}{10}$$

$$\frac{\cancel{21}}{\cancel{160}} \times \frac{\cancel{10}}{\cancel{7}} = \frac{21}{112}$$

$$= \frac{3}{16}$$

Feb 6 Homework solutions

Pg 155 #7 to # 11

$$\frac{\cancel{210}}{1120}$$

$$b) \frac{14}{15} \div \frac{2}{3} \times \frac{5}{8} + \frac{3}{4}$$

$$\frac{14}{15} \times \frac{3}{2} \times \frac{5}{8} + \frac{3}{4}$$

$$\frac{42}{30} \times \frac{5}{8} + \frac{3}{4}$$

$$\frac{\cancel{210}}{\cancel{240}} + \frac{3}{4}$$

$$\frac{21}{24} + \frac{18}{24} = \frac{39}{24}$$

$$= \frac{13}{8}$$

$$\begin{aligned}
 c) \quad & \frac{2}{3} - \frac{1}{4} + \frac{1}{2} \div \frac{2}{5} \\
 & \frac{2}{3} - \frac{1}{4} + \frac{1}{2} \times \frac{5}{2} \\
 & \frac{2}{3} - \frac{1}{4} + \frac{5}{4} \\
 & \frac{8}{12} - \frac{3}{12} + \frac{15}{12} \\
 & \frac{20}{12} \text{ or } \frac{5}{3}
 \end{aligned}$$

Feb 6 Homework solutions

Pg 155 #7 to # 11

$$\begin{aligned}
 d) \quad & \frac{5}{6} - \frac{1}{5} \times \frac{5}{8} + \frac{2}{3} \\
 & \frac{5}{6} - \frac{5}{40} + \frac{2}{3} \\
 & \frac{100}{120} - \frac{15}{120} + \frac{80}{120} = \frac{165}{120}
 \end{aligned}$$

$$\begin{aligned}
 & = \frac{33}{24} = \frac{11}{8}
 \end{aligned}$$

$$\begin{aligned}
 & \frac{5}{6} - \frac{1}{8} + \frac{2}{3} \\
 & \frac{20}{24} - \frac{3}{24} + \frac{16}{24} \\
 & \left\{ \frac{17}{24} + \frac{16}{24} \right. \\
 & \quad \left. = \frac{33}{24} \right. \\
 & \quad = \frac{11}{8}
 \end{aligned}$$

8 a)

No they are not the same

Feb 6 Homework solutions

Pg 155 #7 to # 11

in $\frac{1}{2} \div \frac{1}{4} \times \frac{2}{3}$, you do the division first

- in $\frac{1}{2} \div (\frac{1}{4} \times \frac{2}{3})$, you do the multiplication in the brackets first.

$$9a) \frac{7}{10} - (\frac{1}{5} + \frac{1}{4}) \times \frac{2}{3}$$

$$\frac{7}{10} - (\frac{4}{20} + \frac{5}{20}) \times \frac{2}{3}$$

$$\frac{7}{10} - \frac{9}{20} \times \frac{2}{3}$$

$$\frac{7}{10} - \frac{18}{60}$$

$$\frac{42}{60} - \frac{18}{60}$$

$$\frac{24}{60} \text{ or } \frac{2}{5}$$

$$\frac{7}{10} - \frac{18}{60}$$

$$\frac{7}{10} - \frac{3}{10}$$

$$\frac{4}{10} \text{ or } \frac{2}{5}$$

pg 155

Feb 6 Homework solutions

Pg 155 #7 to # 11

$$9b) \left(\frac{1}{4} + \frac{5}{6} - \frac{1}{3}\right) \times \frac{8}{5}$$

$$\left(\frac{3}{12} + \frac{10}{12} - \frac{4}{12}\right) \times \frac{8}{5}$$

$$\frac{9}{12} \times \frac{8}{5} = \frac{72}{60} \div 12$$

$$= \frac{6}{5}$$

$$c) \left(\frac{6}{5} + \frac{4}{10}\right) \times \left(\frac{3}{8} - \frac{1}{16}\right)$$

$$\left(\frac{12}{10} + \frac{4}{10}\right) \times \left(\frac{12}{32} - \frac{2}{32}\right)$$

$$\frac{16}{10} \times \frac{10}{32} = \frac{16}{32} \text{ or } \frac{1}{2}$$

$$\frac{16}{10} \times \frac{10}{32} = \frac{160}{320}$$

$$= \frac{1}{2}$$

$$10a) \frac{5}{2} + \frac{1}{4} \times \frac{4}{5} \div \frac{1}{10} - \frac{1}{2}$$

$$\frac{5}{2} + \frac{4}{20} \times \frac{10}{1} - \frac{1}{2} - \frac{1}{2}$$

$$\frac{5}{2} + \frac{40}{20} - \frac{1}{2} - \frac{1}{2}$$

$$\frac{5}{2} + \frac{4}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\frac{5}{2} + 2 - \frac{1}{2} - \frac{1}{2}$$

$$\frac{5}{2} + 2 - \frac{1}{2}$$

$$4$$

$$\frac{5}{2} + \frac{40}{20} - \frac{1}{2}$$

$$2\frac{1}{2} + 2 - \frac{1}{2}$$

$$4$$

$$b) \frac{4}{9} \times \left(\frac{2}{3} - \frac{1}{6} \right) - \frac{1}{8} \times \frac{4}{3}$$

$$\frac{4}{9} \times \left(\frac{4}{6} - \frac{1}{6} \right) - \frac{1}{8} \times \frac{4}{3}$$

$$\frac{4}{9} \times \frac{3}{6} - \frac{1}{8} \times \frac{4}{3}$$

$$\frac{12}{36} - \frac{4}{24}$$

$$\frac{2}{6} - \frac{1}{6} = \frac{1}{6}$$

Feb 6 Homework solutions

Pg 155 #7 to # 11

$$11. 4 \times \left(\frac{3}{4} - \frac{1}{2} \right) + \frac{13}{6} \times \frac{1}{2}$$

$$4 \times \left(\frac{3}{4} - \frac{2}{4} \right) + \frac{13}{6} \times \frac{1}{2}$$

$$\frac{4}{1} \times \frac{1}{4} + \frac{13}{6} \times \frac{1}{2}$$

$$1 + \frac{13}{12}$$

$$1 + 1\frac{1}{12} = 2\frac{1}{12}$$

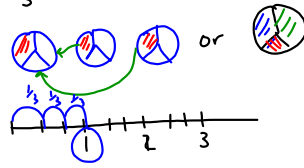
Myra was correct

pg 159

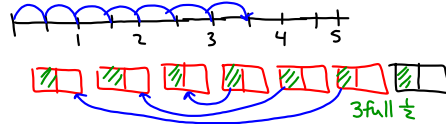
1) a) $\frac{2}{5} \times 6 = 2\frac{2}{5}$ b) $\frac{6}{7} \times 3 = 2\frac{4}{7}$

2a) $\frac{1}{3} \times 3 = \frac{3}{3} = 1$

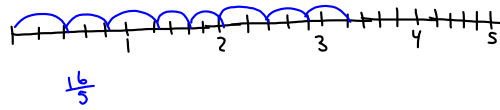
Feb 6 Homework solutions
Pg 159 #1 to #4



2b) $7 \times \frac{1}{2} = 3\frac{1}{2}$



c) $8 \times \frac{2}{5} = 3\frac{1}{5}$



3a) $\frac{3}{5} \times \frac{30}{1} = \frac{90}{5} = 18$ 18 students are girls
 $\frac{3}{5} \times \frac{30}{1} = \frac{3 \times 30}{5 \times 1} = \frac{90}{5} = 18$

3b) $6 \times \frac{2}{3} = \frac{12}{3} = 4$ full glasses

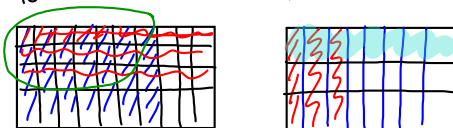
3c) $\frac{2}{3} \times 75$ 50 new cars
 $\frac{2}{3} \times \frac{75}{1} = \frac{2 \times 75}{3 \times 1} = \frac{150}{3} = 50$

3d) $\frac{1}{12} \times \frac{18}{1}$
 $= \frac{18}{12}$
 $= \frac{18^3}{12^2}$
 $= \frac{3}{2}$
 $= 1\frac{1}{2}$ cakes needed

4) a) $\frac{2}{3} \times \frac{3}{8} = \frac{6}{24} = \frac{1}{4}$ b) $\frac{4}{5} \times \frac{3}{10} = \frac{12}{50}$



4d) $\frac{7}{10} \times \frac{3}{7} = \frac{21}{70}$ 4d) $\frac{3}{7} \times \frac{1}{3} = \frac{3}{21} = \frac{1}{7}$



5) $\frac{3}{5} \times \frac{1}{4} = \frac{3}{20}$

Class/Homework

Test Thursday, Feb. 16

pg. 159 # 5-30

Answer

STUDY

solutions posted tonight in
this file

Test Outline

7 Multiple Choice	7 points	} 54
8 Short Response	47 points	
Review for Test		

Be able to find equivalent fractions and reduce fractions

Be able to change from mixed number to an improper fraction and vice versa

Be able to add and subtract proper, improper fractions and mixed numbers

Be able to model multiplication of fractions using number lines and squares.

Be able to model division of fractions using number lines and squares.

Be able to multiply and divide fractions and mixed numbers using "rules"

Be able to solve word problems involving addition, subtraction, multiplication and division of fractions.

Be able to solve order of operations questions involving fractions.

pg 159

6. a) $\frac{1}{2} \times \frac{3}{10} = \frac{3}{20}$

closer to 0
(small fraction)

b) $\frac{3}{5} \times \frac{1}{8} = \frac{3}{40}$

small fraction,
close to 0

c) $\frac{7}{8} \times \frac{2}{5} = \frac{14}{40}$

less than $\frac{1}{2}$

d) $\frac{3}{11} \times \frac{44}{21} = \frac{4}{21}$

7. $\frac{2}{5}$ of $\frac{3}{4}$
 $\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$
or $\frac{3}{10}$

11. a) $\frac{12}{3} \times \frac{9}{10} \approx 2 \times 2$
 $\frac{5}{3} \times \frac{19}{10} = \frac{95}{30}$
 $= \frac{19}{6}$

b) $4\frac{1}{2} \times \frac{5}{8} \approx \frac{1}{2}$ of 4
 $\frac{9}{2} \times \frac{5}{8} = \frac{45}{16}$

c) $\frac{9}{5} \times \frac{14}{8} \approx 2 \times 2$
 $= \frac{116}{40}$
 $= \frac{58}{20} = \frac{29}{10}$

d) $\frac{13}{10} \times 6\frac{2}{3} \approx 1 \times 7$
 $\frac{13}{10} \times \frac{20}{3} = \frac{26}{3}$

$$12. \quad 1\frac{3}{4} \times 2\frac{1}{3}$$

$$\frac{7}{4} \times \frac{7}{3} = \frac{49}{12} \text{ or } 4\frac{1}{12} \text{ hours to mow the lawn}$$

$$14. \text{ a) } \frac{3}{1} \div \frac{4}{5}$$

$$\frac{3}{1} \times \frac{5}{4} = \frac{15}{4}$$

$$\text{b) } 4 \div \frac{5}{6}$$

$$\frac{4}{1} \times \frac{6}{5} = \frac{24}{5}$$

$$\text{c) } \frac{3}{10} \div 2$$

$$\frac{3}{10} \times \frac{1}{2} = \frac{3}{20}$$

$$\text{d) } 2\frac{5}{8} \div 3$$

$$\frac{21}{8} \times \frac{1}{3} = \frac{21}{24}$$

$$= \frac{7}{8}$$

$$19. a) \frac{3}{4} \div \frac{3}{8}$$

$$\frac{3}{4} \times \frac{8}{3} = \frac{24}{12}$$

$$= 2$$

$$b) \frac{1}{4} \div \frac{7}{8}$$

$$\frac{1}{4} \times \frac{8}{7} = \frac{8}{28}$$

$$= \frac{2}{7}$$

$$c) \frac{5}{12} \div \frac{1}{3}$$

$$\frac{5}{12} \times \frac{3}{1} = \frac{15}{12}$$

$$= \frac{5}{4}$$

$$d) \frac{1}{2} \div \frac{3}{5}$$

$$\frac{1}{2} \times \frac{5}{3} = \frac{5}{6}$$

$$20. \frac{7}{8} \div \frac{1}{6}$$

$$\frac{7}{8} \times \frac{6}{1} = \frac{42}{8}$$

$$= \frac{21}{4}$$

23.

a) $1\frac{3}{4} \div 2\frac{1}{8}$

$$\frac{7}{4} \div \frac{17}{8}$$

$$\frac{7}{4} \times \frac{8^2}{17} = \frac{14}{17}$$

b) $3\frac{5}{6} \div 2\frac{1}{5}$

$$\frac{23}{6} \div \frac{11}{5}$$

$$\frac{23}{6} \times \frac{5}{11} = \frac{115}{66}$$

c) $3\frac{1}{2} \div 1\frac{3}{8}$

$$\frac{7}{2} \div \frac{11}{8}$$

$$\frac{7}{2} \times \frac{8^4}{11} = \frac{28}{11}$$

d) $2\frac{1}{5} \div 4\frac{2}{5}$

$$\frac{11}{5} \div \frac{22}{5}$$

$$\frac{11}{5} \times \frac{5^1}{22} = \frac{11}{22}$$

$$= \frac{1}{2}$$

25.

$$\frac{3}{4} - \frac{5}{8}$$

$$\frac{6}{8} - \frac{5}{8} = \frac{1}{8}$$

She needs $\frac{1}{8}$ of a cup

27.

$$\frac{1}{3} + \frac{1}{6} + \frac{1}{5}$$

$$\frac{10}{30} + \frac{5}{30} + \frac{6}{30} = \frac{21}{30} \text{ or } \frac{7}{10}$$

walk

$$1 - \frac{7}{10} = \frac{3}{10}$$

walk to school

b) $\frac{3}{10}$ of 30

$$\frac{1}{10} \text{ of } 30 = 3$$

$$\frac{3}{10} \text{ of } 30 = 3 \times 3$$

$$= 9$$

9 students walk.

$$28 \text{ a) } \frac{1}{5} + \frac{2}{5} \times \frac{3}{5}$$

$$\frac{1}{5} + \frac{2}{5}$$

$$\frac{3}{5}$$

$$b) \frac{4}{5} \div \left(\frac{2}{3} - \frac{3}{10} \right)$$

$$\frac{4}{5} \div \left(\frac{20}{30} - \frac{9}{30} \right)$$

$$\frac{4}{5} \div \frac{11}{30}$$

$$\frac{4}{5} \times \frac{30}{11} = \frac{120}{55}$$

$$= \frac{24}{11}$$

$$c) \frac{7}{3} + \frac{1}{6} \times \frac{2}{5}$$

$$\frac{7}{3} + \frac{2}{30}$$

$$\frac{70}{30} + \frac{2}{30} = \frac{72}{30}$$

$$= \frac{12}{5}$$

$$d) \frac{7}{8} \div \frac{5}{6} \times \frac{4}{7}$$

$$\frac{7}{8} \times \frac{6}{5} \times \frac{4}{7}$$

$$\frac{42}{40} \times \frac{4}{7}$$

$$\frac{168}{280} = \frac{42}{70}$$

$$= \frac{6}{10}$$

$$= \frac{3}{5}$$

29. a)

$$\frac{2}{3} + \frac{1}{4} - \frac{1}{6}$$

$$\frac{8}{12} + \frac{3}{12} - \frac{2}{12} = \frac{9}{12}$$

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

b) $\frac{3}{2} \times (\frac{4}{3} - \frac{1}{6})$

$$\frac{3}{2} \times (\frac{8}{6} - \frac{1}{6})$$

$$\frac{3}{2} \times \frac{7}{6} = \frac{21}{12}$$

$$= \frac{7}{4}$$

c) $\frac{8}{9} \div (\frac{3}{4} + \frac{3}{2})$

$$\frac{8}{9} \div (\frac{3}{4} + \frac{6}{4})$$

$$\frac{8}{9} \div \frac{9}{4}$$

$$\frac{8}{9} \times \frac{4}{9} = \frac{4}{8}$$

$$= \frac{1}{2}$$

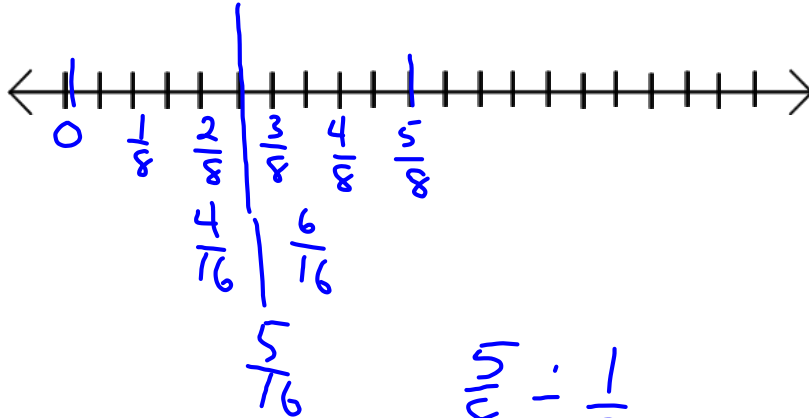
d) $\frac{2}{3} \times (\frac{1}{8} + \frac{5}{6} - \frac{3}{4})$

$$\frac{2}{3} \times (\frac{3}{24} + \frac{20}{24} - \frac{18}{24})$$

$$\frac{2}{3} \times \frac{5}{24} = \frac{10}{72}$$

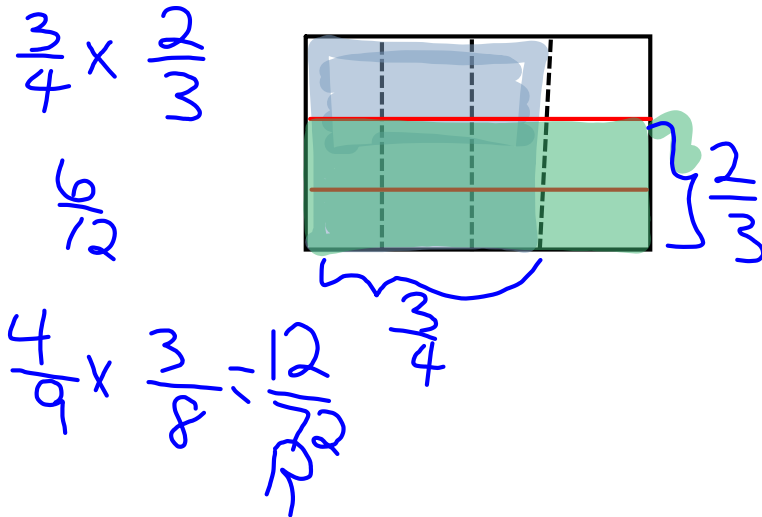
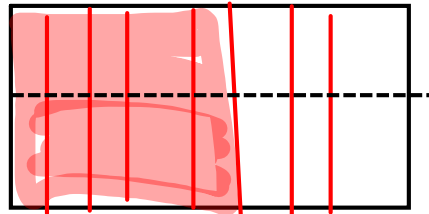
$$= \frac{5}{36}$$

$$\frac{8}{5} \div 2$$



$$\frac{5}{6} \div \frac{1}{2}$$

$$\frac{5}{6} \times \frac{2}{1} = \frac{10}{6} = \frac{5}{3}$$

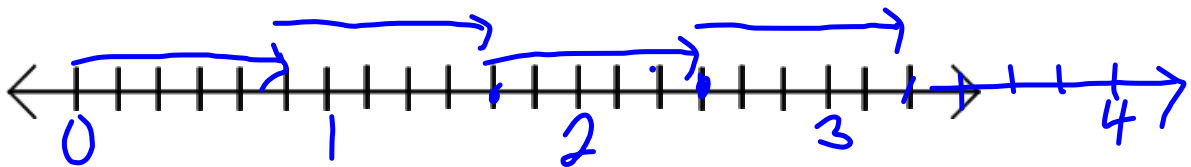


$$\frac{3}{4} \times \frac{2}{3}$$

$$\frac{9}{12} \times \frac{2}{3} = \frac{18}{36} = \frac{1}{2}$$

$$\frac{7}{2} \div \frac{4}{1} = \frac{7}{2} \times \frac{1}{4} = \frac{7}{8}$$

$$4 \div \frac{5}{6}$$



$$4\frac{4}{5}$$