



February 21, 2019

Math 8



Test FRIDAY

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?

$15L$

$$\begin{aligned}
 & \text{Bucket} \div \text{Jug} \\
 & 15 \div 2\frac{2}{5} \\
 & = 15 \div \frac{12}{5} \quad \text{f.l.p and mult} \\
 & = \frac{15 \div 3}{1} \times \frac{5}{12 \div 3} \\
 & = \frac{5 \times 5}{1 \times 4} \\
 & = \frac{25}{4} \quad \text{Change to mix} \\
 & = 6\frac{1}{4}
 \end{aligned}$$

$15L$ will fill $6\frac{1}{4}$ Jugs

Evaluate

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

$$= \frac{1}{2} - \frac{3}{30} \text{ Reduce}$$

$$= \frac{1 \times 5}{2 \times 5} - \frac{1}{10}$$

Need C.D.

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

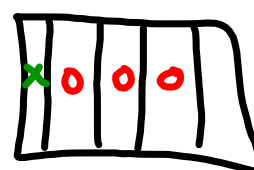
$$= \frac{4}{10} \text{ Reduce}$$

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

Use a diagram to find

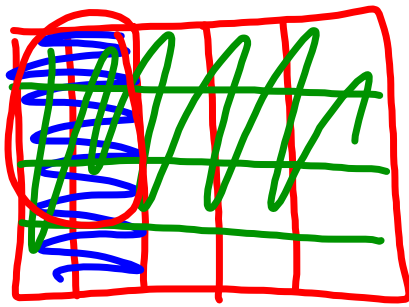
(Blocks or)
#line

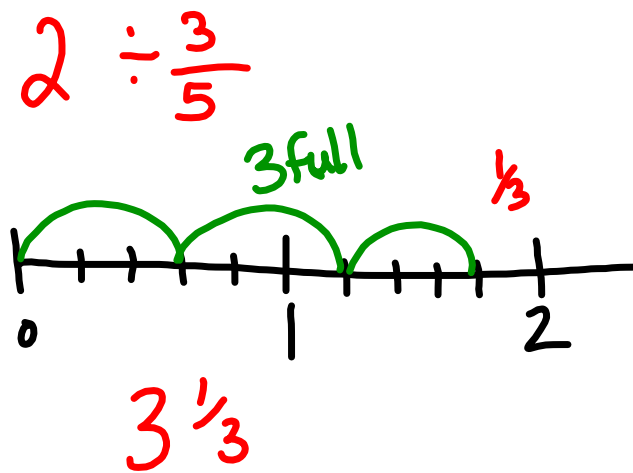
$$2 \div \frac{3}{5}$$



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

$$5\frac{2}{4} \times \frac{3}{4} = \frac{6}{20} = \frac{3}{10}$$





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

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

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

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

Feb 6 Homework solutions

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

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

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

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

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

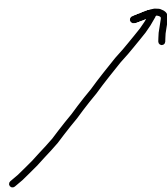
$$\frac{21}{24} + \frac{18}{24} = \frac{39}{24}$$

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

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

Feb 6 Homework solutions
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$$\begin{aligned}
 d) \quad & \frac{5}{6} - \frac{1}{5} \times \frac{5}{8} + \frac{2}{3} \\
 & \frac{5}{6} - \frac{5}{40} + \frac{2}{3} \\
 & \frac{100}{120} - \frac{15}{120} + \frac{80}{120} = \frac{165}{120} \\
 & = \frac{33}{24} = \frac{11}{8}
 \end{aligned}$$



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

8 a)

No they are not the same

Feb 6 Homework solutions

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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.

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

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

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

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

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

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

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

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

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

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$$\begin{aligned}
 9b) & \left(\frac{1}{4} + \frac{5}{6} - \frac{1}{3}\right) \times \frac{8}{5} \\
 & \left(\frac{3}{12} + \frac{10}{12} - \frac{4}{12}\right) \times \frac{8}{5} \\
 & \frac{9}{12} \times \frac{8}{5} = \frac{72}{60} \begin{matrix} \div 12 \\ \div 12 \end{matrix} \\
 & = \frac{6}{5}
 \end{aligned}$$

Feb 6 Homework solutions

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$$\begin{aligned}
 c) & \left(\frac{6}{5} + \frac{4}{10}\right) \times \left(\frac{3}{8} - \frac{1}{16}\right) \\
 & \left(\frac{12}{10} + \frac{4}{10}\right) \times \left(\frac{3}{8} - \frac{2}{32}\right)
 \end{aligned}$$

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

$$\begin{aligned}
 \frac{16}{10} \times \frac{10}{32} &= \frac{160}{320} \\
 &= \frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 10a) & \frac{5}{2} + \frac{1}{4} \times \frac{4}{5} \div \frac{1}{10} - \frac{1}{2} \\
 & \frac{5}{2} + \frac{4}{20} \times \frac{10}{1} - \frac{1}{2} - \frac{1}{2} \\
 & \frac{5}{2} + \frac{40}{20} - \frac{1}{2} - \frac{1}{2} \\
 & \frac{5}{2} + \frac{4}{2} - \frac{1}{2} - \frac{1}{2} \\
 & \frac{5}{2} \text{ or } 2\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 \frac{5}{2} + \frac{40}{20} - \frac{1}{2} \\
 2\frac{1}{2} + 2 - \frac{1}{2} \\
 4
 \end{aligned}$$

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

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

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

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

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

Feb 6 Homework solutions

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

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

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

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

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

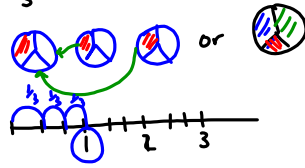
Myra was correct

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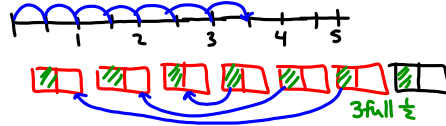
1) a) $\frac{2}{3} \times 6 = 2\frac{2}{3}$ b) $\frac{6}{7} \times 3 = 2\frac{4}{7}$

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

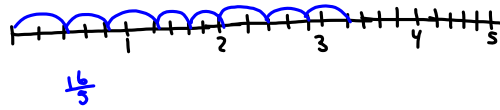
Feb 6 Homework solutions
Pg 159 #1 to #4



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



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



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

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

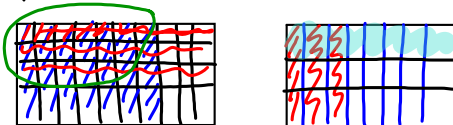
3c) $\frac{2}{3} \times 75$ 50 new cars
 $\frac{2}{3} \times \frac{75}{1}$
 $\frac{2 \times 25}{1} = 50$

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

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



4) $\frac{7}{10} \times \frac{3}{4} = \frac{21}{40}$ 4) $\frac{3}{7} \times \frac{1}{3} = \frac{3}{21} = \frac{1}{7}$



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

Class/Homework

Test FRIDAY, Feb. 22

pg. 159 # 5-30

STUDY

solutions posted tonight in
this file

Test Outline

7 Multiple Choice	7 points	} 50
8 Short Response	45 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.

$$2\frac{7}{6} \times 4\frac{3}{5}$$

↓
Im

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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) $\frac{2}{1} \times \frac{4}{21} = \frac{4}{21}$

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

11. a) $\frac{2}{3} \times \frac{9}{10} \approx 2 \times 2$
 $\frac{2}{3} \times \frac{9}{10} = \frac{18}{30}$
 $= \frac{19}{6}$

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

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

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

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

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

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

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

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

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

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

$$\frac{21}{8} \times \frac{1}{3} = \frac{7}{8}$$

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

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

$$= 2$$

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

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

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

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

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

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

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

$$\frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$$

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

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

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

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

$$23. \quad a) \quad 1\frac{3}{4} \div 2\frac{1}{8}$$

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

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

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

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

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

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

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

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

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

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

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

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

$$25. \quad \frac{3}{4} - \frac{5}{8}$$

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

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

$$27. \quad \frac{1}{3} + \frac{1}{6} + \frac{1}{5}$$

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

$$\text{walk} \quad 1 - \frac{7}{10} = \frac{3}{10} \quad \text{walk to school}$$

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

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

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

$$= 9$$

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

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

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

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

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

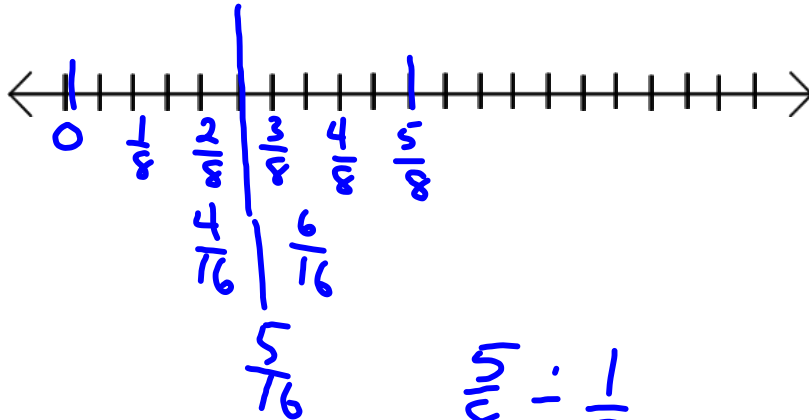
d) $\frac{2}{3} \times (\frac{1}{8} + \frac{5}{6} - \frac{3}{4})$

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

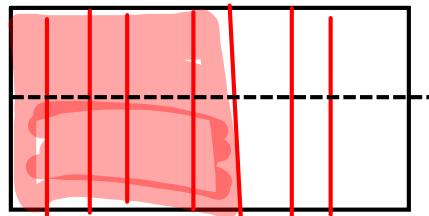
$$\frac{2}{3} \times \frac{5}{24} = \frac{10}{72}$$

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

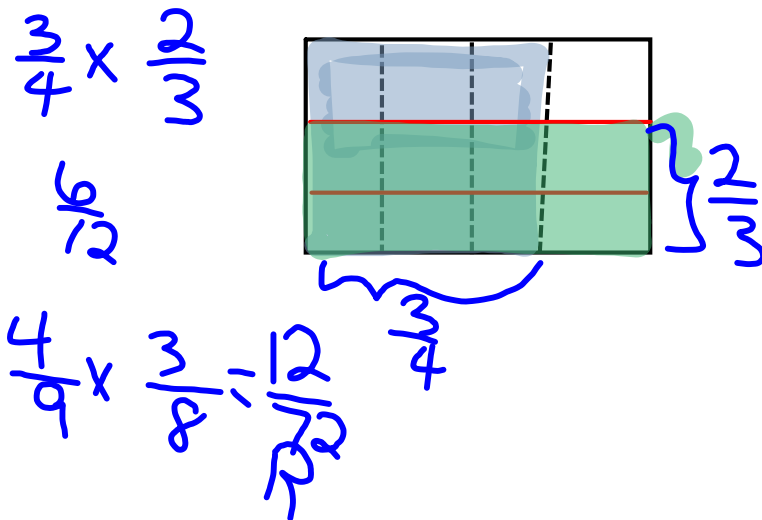
$$\frac{2}{5} \div 2$$



$$\frac{5}{15} \div \frac{1}{2}$$

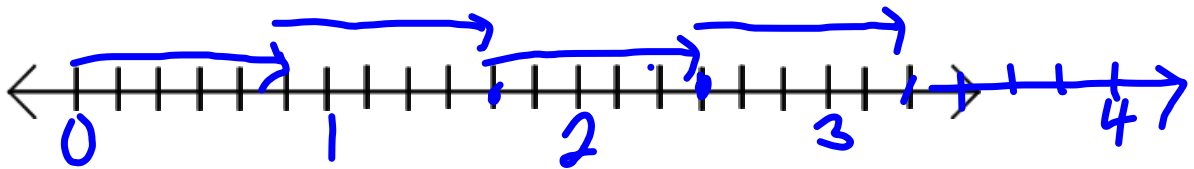


$$\frac{5}{15} \div \frac{1}{2} = \frac{1}{3} \div \frac{1}{2}$$



$$\frac{7}{2} \div \frac{1}{4} = \frac{7}{48}$$

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



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