

Warm Up Grade 8
Nov. 30, 2023



Multiply and Reduce

$$1) \quad \frac{21}{4} \times \frac{4}{14}$$

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

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

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

$$= \frac{84}{56} = \frac{42}{28} = \frac{3}{2} = 1\frac{1}{2}$$

$$2) \quad 1\frac{3}{5} \times 2\frac{1}{3}$$

$$\frac{8}{5} \times \frac{7}{3}$$

$$\frac{56}{15}$$

$$3\frac{4}{15}$$

Homework pg. 113 # 13ab and pg. 118 # 6-12 omit 10

pg 113

10. a) $\frac{3}{5} \times \frac{1}{2} = \frac{3}{10}$

b) $\frac{6}{8} \times \frac{1}{3} = \frac{6}{24}$

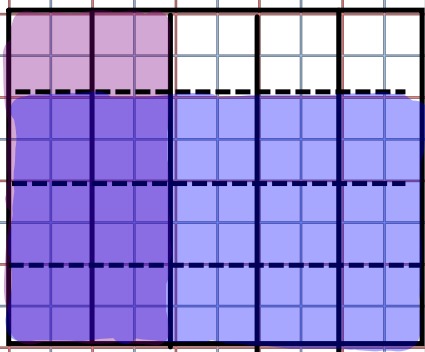
c) $\frac{1}{3} \times \frac{3}{4} = \frac{3}{12}$
 $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$
 $\frac{1}{5} \times \frac{2}{3} = \frac{2}{15}$

11. $\frac{1}{2} \times \frac{1}{5} = \frac{1}{10}$
 $\frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$
 $\frac{1}{4} \times \frac{1}{5} = \frac{1}{20}$
 $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$

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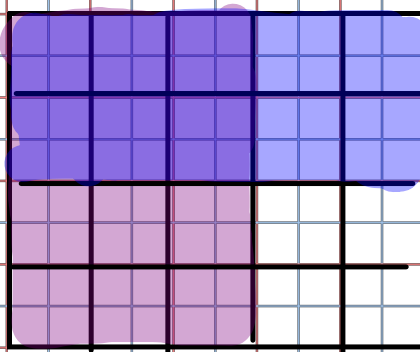
Homework pg. 113 # 13ab and pg. 118 # 6-12 omit 10

12a) $\frac{3}{4} \times \frac{2}{5}$



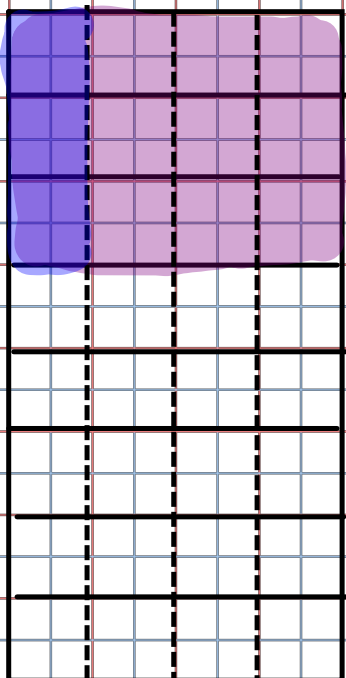
$= \frac{6}{20}$

12b) $\frac{2}{4} \times \frac{3}{5}$

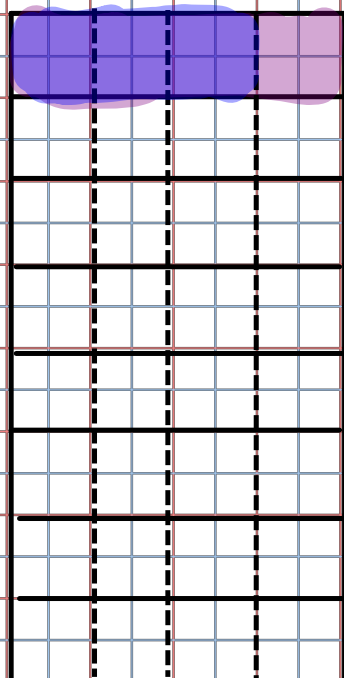


$= \frac{6}{20}$

12c) $\frac{1}{4} \times \frac{3}{8}$



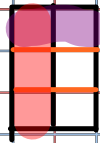
12d) $\frac{3}{4} \times \frac{1}{8}$



Homework pg. 113 # 13ab and pg. 118 # 6-12 omit.10

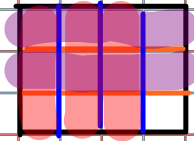
Models

$$13. a) \frac{1}{3} \text{ of } \frac{1}{2} = \frac{1}{6}$$



$$b) \frac{3}{4} \text{ of } \frac{2}{3} = \frac{6}{12}$$

or $\frac{1}{2}$



$$c) \frac{1}{4} \text{ of } \frac{2}{5} = \frac{2}{20}$$

or $\frac{1}{10}$

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Homework pg. 113 # 13ab and pg. 118 # 6-12 omit 10

6. $\frac{3}{10}$ of $\frac{5}{8}$

$$\frac{3}{10} \times \frac{5}{8} = \frac{15}{80}$$

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

"cancelling"

$$\frac{\cancel{3}^1 \times \cancel{5}_1}{\cancel{10}_2 \times 8} = \frac{3}{16}$$

a) $\frac{3}{4} \times \frac{8}{5} = \frac{24}{20}$

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

$$\frac{\cancel{3}^1 \times \cancel{8}_2^2}{\cancel{4}_1 \times 5} = \frac{6}{5}$$

b) $\frac{1}{3} \times \frac{9}{10} = \frac{9}{30}$

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

$$\frac{\cancel{1}^1 \times \cancel{9}_3^3}{\cancel{3}_1 \times 10} = \frac{3}{10}$$

c) $\frac{7}{5} \times \frac{15}{21} = \frac{105}{105}$

$$= 1$$

$$\frac{\cancel{7}^1 \times \cancel{15}_3^3}{\cancel{5}_1 \times \cancel{21}_7^7} = \frac{1}{1}$$

d) $\frac{5}{9} \times \frac{3}{5} = \frac{15}{45}$

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

$$\frac{\cancel{5}^1 \times \cancel{3}_1^1}{\cancel{9}_3 \times \cancel{5}_1} = \frac{1}{3}$$

e) $\frac{2}{9} \times \frac{15}{4} = \frac{30}{36}$

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

$$\frac{\cancel{2}^1 \times \cancel{15}_3^3}{\cancel{9}_3 \times \cancel{4}_2^2} = \frac{5}{6}$$

f) $\frac{7}{3} \times \frac{9}{14} = \frac{63}{42}$

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

$$\frac{\cancel{7}^1 \times \cancel{9}_3^3}{\cancel{3}_1 \times \cancel{14}_2^2} = \frac{3}{2}$$

Homework pg. 113 # 13ab and pg. 118 # 6-12 omit 10

$$a) \frac{3}{5} \times \frac{2}{3} = \frac{6}{15}$$

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

$$\frac{\cancel{3}}{5} \times \frac{2}{\cancel{3}_1} = \frac{2}{5}$$

$$b) \frac{1}{2} \times \frac{5}{10} = \frac{5}{20}$$

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

$$\frac{1}{2} \times \frac{\cancel{5}}{\cancel{10}_2} = \frac{1}{4}$$

$$c) \frac{1}{6} \times \frac{1}{4} = \frac{1}{24}$$

$$d) \frac{13}{8} \times \frac{3}{2} = \frac{39}{16}$$

$$e) \frac{5}{4} \times \frac{11}{10} = \frac{55}{40}$$

$$= \frac{11}{8}$$

$$\frac{\cancel{5}}{4} \times \frac{11}{\cancel{10}_2} = \frac{11}{8}$$

$$f) \frac{7}{3} \times \frac{7}{8} = \frac{49}{24}$$

9. a) $\frac{1}{4}$ of $\frac{3}{8}$ Homework pg. 113 # 13ab and pg. 118 # 6-12 omit 10

$$\frac{1}{4} \times \frac{3}{8} = \frac{3}{32} \quad \begin{array}{l} \text{of savings} \\ \text{Spent on cost} \end{array}$$

b) Gervais ate $\frac{1}{3}$

Chantel ate $\frac{1}{4}$ of what was left. $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$

How much was left?

Chantel

$$\frac{1}{4} \text{ of } \frac{2}{3} = \frac{2}{12}$$

or $\frac{1}{6}$

10. $\frac{7}{8} \times \frac{1}{2}$ or $\frac{1}{2}$ of $\frac{7}{8}$.

There $\frac{7}{8}$ of a choc. bar on the table. Sue ate $\frac{1}{2}$ of it. How much do Sue eat?

$$\frac{1}{2} \times \frac{7}{8} = \frac{7}{16}$$

11. Spent $\frac{5}{6}$ of $\frac{3}{4}$

$$\frac{5}{6} \times \frac{3}{4} = \frac{15}{24}$$

spent

$$= \frac{5}{8}$$

$$1 - \frac{5}{8} = \frac{3}{8} \text{ of allowance left.}$$

$$\star 12a) \frac{3}{4} \times \frac{4}{3} = \frac{12}{12} = 1$$

$$\star b) \frac{1}{5} \times \frac{5}{1} = \frac{5}{5} = 1$$

$$\star c) \frac{7}{2} \times \frac{2}{7} = \frac{14}{14} = 1$$

$$\star d) \frac{5}{6} \times \frac{6}{5} = \frac{30}{30} = 1$$

Fraction \times Reciprocal = 1
(Flipped)

Reciprocals: when numerator and denominator are flipped

$$i) \frac{3}{4} \times \frac{4}{3} = \frac{12}{12} = 1 \quad ii) \frac{1}{5} \times \frac{5}{1} = \frac{5}{5} = 1$$

$$iii) \frac{7}{2} \times \frac{2}{7} = \frac{14}{14} = 1 \quad iv) \frac{5}{6} \times \frac{6}{5} = \frac{30}{30} = 1$$

Multiplying by reciprocals will always give the answer 1

Multiplying Mixed Numbers

*Always change to IMPROPER

Do we need another...

a) $2\frac{4}{7} \times 4\frac{1}{5}$

$$\frac{18}{7} \times \frac{21}{5}$$

$$\frac{18}{7 \div 7} \times \frac{21 \div 7}{5}$$

$$\frac{378}{35} \quad \text{OR}$$

$$\frac{18}{1} \times \frac{3}{5}$$

$$10 \frac{28}{35} \begin{matrix} \div 7 \\ \div 7 \end{matrix}$$

$$10 \frac{4}{5}$$

$$\frac{54}{5}$$

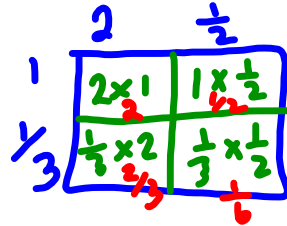
$$10 \frac{4}{5}$$

Multiplying Mixed Numbers

it can be done another way but it is more difficult

a)

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



$$= (2 \times 1) + \left(\frac{1}{2} \times 1\right) + \left(2 \times \frac{1}{3}\right) + \left(\frac{1}{2} \times \frac{1}{3}\right)$$

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

$$= (2) + \underbrace{\left(\frac{1}{2}\right) + \left(\frac{2}{3}\right) + \left(\frac{1}{6}\right)}$$

need common denominators

$$= 2 + \underbrace{\frac{3}{6} + \frac{4}{6} + \frac{1}{6}}$$

$$= 2 + \frac{8}{6}$$

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

$$= 3 \frac{2}{6}$$

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

Not going to use this in Grade 8

Class/Homework

*Always change to improper first to multiply

Page 120 # 15(a,b,~~cd~~), #16(a)

Page 125 #4(a,b,c), #5(b,h,e), #6(b,h,e),
#7(Just multiply no estimation), #9

Warm Up Quiz ~~Monday~~ **Tuesday**

#1(Model with a rectangular box..grid paper), #2 multiply and reduce(a,b,c)