



Warm Up Grade 8

Feb. 12, 2016

$$\text{a) } \frac{4}{9} \div \frac{3}{8}$$

$$\frac{4}{9} \times \frac{8}{3}$$

$$= \frac{32}{27}$$

$$\text{b) } \frac{16}{21} \div \frac{32}{7}$$

$$= \frac{16}{21} \times \frac{7}{32}$$

$$= \frac{16 \div 16}{3} \times \frac{7 \div 7}{32 \div 16}$$

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

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

OR

$$= \frac{112}{672}$$

$$\frac{56}{336}$$

$$\frac{28}{168}$$

$$\frac{14}{84}$$

$$= \frac{7}{42}$$

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

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4. Number Reciprical

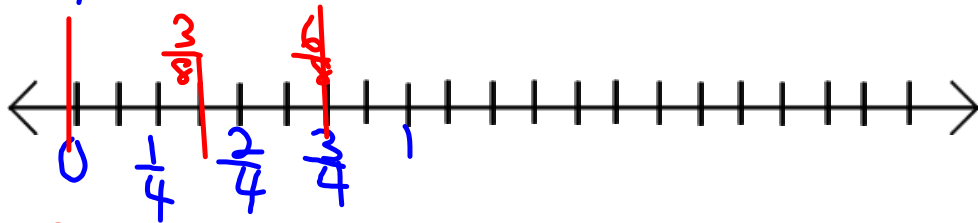
a) $\frac{5}{9} \rightarrow \frac{9}{5}$

b) $\frac{3}{7} \rightarrow \frac{7}{3}$

c) $\frac{7}{8} \rightarrow \frac{8}{7}$

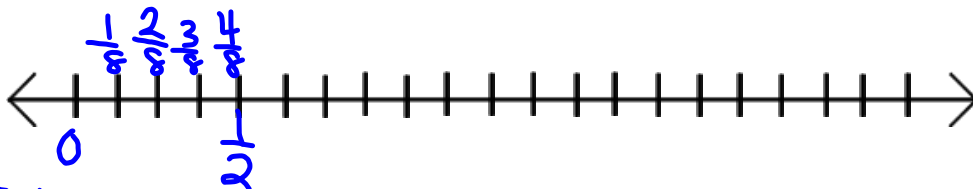
d) $\frac{14}{15} \rightarrow \frac{15}{14}$

5a) $\frac{3}{4} \div \frac{3}{8}$ (How many $\frac{3}{8}$ in $\frac{3}{4}$)



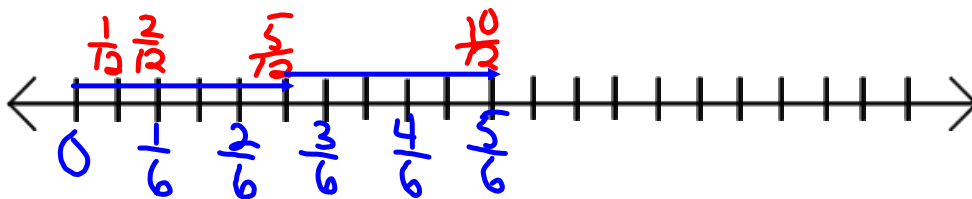
= 2

b) $\frac{1}{2} \div \frac{1}{8}$



= 4

c) $\frac{5}{6} \div \frac{5}{12}$

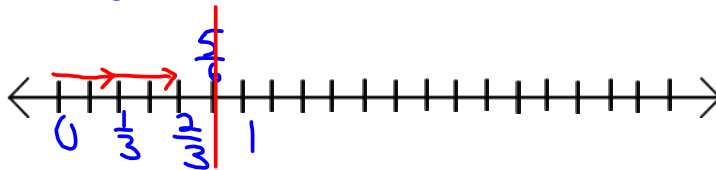
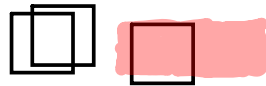


= 2

$$\begin{aligned}
 6. \quad & \frac{3}{5} \div \frac{9}{10} \\
 & \frac{3}{5} \times \frac{10}{9} \\
 & = \frac{30}{45} \\
 & = 2 \frac{1}{3}
 \end{aligned}$$

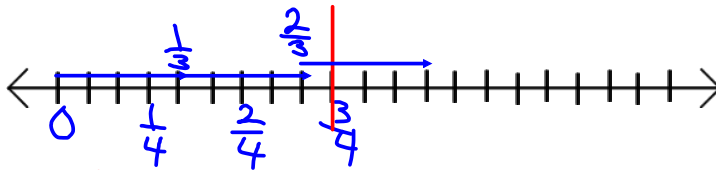
$$\frac{\cancel{3}}{\cancel{5}} \times \frac{\cancel{10}^2}{\cancel{9}_3} = \frac{1 \cdot 2}{1 \cdot 3} = \frac{2}{3}$$

$$7a) \quad -\frac{5}{6} \div \frac{1}{3}$$



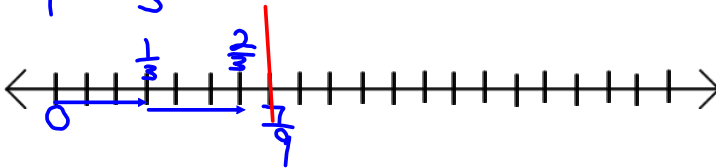
$$= 2 \frac{1}{2}$$

$$b) \quad \frac{3}{4} \div \frac{1}{2}$$



$$2 \frac{1}{4}$$

$$c) \quad \frac{7}{9} \div \frac{1}{3}$$



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

$$d) \quad \frac{5}{8} \div \frac{1}{4}$$



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

8 a) $\frac{7}{10} \div \frac{3}{10}$
 $\frac{7}{10} \times \frac{10}{3} = \frac{7}{3}$

b) $9\frac{5}{9} \div 9\frac{2}{9}$
 $\frac{81}{9} \times \frac{9}{2} = 40\frac{5}{2}$

c) $5\frac{3}{5} \div 5\frac{2}{5}$
 $\frac{28}{5} \times \frac{5}{3} = 10\frac{2}{3}$

d) $5\frac{4}{5} \div 5\frac{2}{5}$
 $\frac{29}{5} \times \frac{5}{2} = 14\frac{2}{2} = 15$

9 a) $5\frac{8}{5} \div 4\frac{3}{5}$
 $\frac{33}{5} \times \frac{5}{7} = 32\frac{2}{7}$

b) $6\frac{9}{10} \div 2\frac{5}{10}$
 $\frac{69}{10} \times \frac{2}{5} = 27\frac{2}{5}$

c) $2\frac{7}{2} \div 3\frac{4}{3}$
 $\frac{7}{2} \times \frac{3}{4} = 2\frac{21}{8}$

d) $2\frac{1}{2} \div 6\frac{7}{6}$
 $\frac{5}{2} \times \frac{6}{37} = \frac{15}{37}$

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$$\text{10) } \frac{7}{12} \div \frac{1}{4}$$

$$\frac{7}{12} \times \frac{4}{1} = \frac{28}{12}$$

$$= \frac{7}{3}$$

$$\text{b) } \frac{3}{5} \div \frac{11}{10}$$

$$\frac{3}{5} \times \frac{10}{11} = \frac{30}{55}$$

$$= \frac{6}{11}$$

$$\text{c) } \frac{5}{2} \div \frac{1}{3}$$

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

$$\text{d) } \frac{5}{6} \div \frac{9}{8}$$

$$\frac{5}{6} \times \frac{8}{9} = \frac{40}{54}$$

$$= \frac{20}{27}$$

$$\text{11) a) } \frac{5}{3} \div \frac{3}{5}$$

$$\frac{5}{3} \times \frac{5}{3} = \frac{25}{9}$$

$$\text{b) } \frac{4}{9} \div \frac{4}{9} = 1$$

$$\frac{4}{9} \times \frac{9}{4} = \frac{36}{36}$$

$$= 1$$

$$\text{c) } \frac{1}{6} \div \frac{5}{2}$$

$$\frac{1}{6} \times \frac{2}{5} = \frac{2}{30}$$

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

$$\text{12) a) } \frac{11}{12} \div \frac{1}{4}$$

$$\frac{11}{12} \times \frac{4}{1} = \frac{44}{12}$$

$$= \frac{11}{3}$$

$$\text{or } 3\frac{2}{3}$$

$$\text{b) } \frac{11}{12} \div \frac{1}{3}$$

$$\frac{11}{12} \times \frac{3}{1} = \frac{33}{12}$$

$$= \frac{11}{4}$$

$$\text{or } 2\frac{3}{4}$$

$$\text{c) } \frac{11}{12} \div \frac{1}{6}$$

$$\frac{11}{12} \times \frac{6}{1} = \frac{66}{12}$$

$$= \frac{11}{2}$$

$$\text{or } 5\frac{1}{2}$$

$$\text{d) } \frac{11}{12} \div \frac{1}{2}$$

$$\frac{11}{12} \times \frac{2}{1} = \frac{22}{12}$$

$$= \frac{11}{6}$$

$$\text{or } 1\frac{5}{6}$$

$$13) \frac{3}{4} \div \frac{5}{8}$$

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

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

$$i) \frac{5}{8} \div \frac{3}{4}$$

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

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

$$ii) \frac{7}{12} \div \frac{2}{5}$$

$$\frac{7}{12} \times \frac{5}{2} = \frac{35}{24}$$

$$ii) \frac{2}{5} \div \frac{7}{12}$$

$$\frac{2}{5} \times \frac{12}{7} = \frac{24}{35}$$

$$v) \frac{5}{3} \div \frac{4}{5}$$

$$\frac{5}{3} \times \frac{5}{4} = \frac{25}{12}$$

$$v) \frac{4}{5} \div \frac{3}{5}$$

$$\frac{4}{5} \times \frac{5}{3} = \frac{12}{3}$$

$$14) \frac{2}{3} \div \frac{1}{12}$$

$$\frac{2}{3} \times \frac{12}{1} = \frac{24}{3}$$

$$= 8$$

He can clear 8 tables in $\frac{2}{3}$ hour

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$$16) \frac{3}{4} \div \frac{1}{16}$$

$$\frac{3}{4} \times \frac{16}{1} = \frac{48}{4}$$

$$= 12$$

12 pairs of students can do the experiment

$$17) \frac{a}{b} \div \frac{c}{d} \quad 2, 3, 4, 5$$

many possibilities

b) Greatest Quotient

Largest Number \div Smallest

$$\frac{5}{2} \div \frac{3}{4} \quad \frac{4}{3} \div \frac{2}{5}$$

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

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

Smallest Quotient

Smallest \div Largest

$$\frac{2}{5} \div \frac{4}{3} \quad \frac{3}{4} \div \frac{5}{2}$$

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

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

$$15) a) \frac{27}{28} \div \frac{9}{14}$$

$$= \frac{27}{28} \times \frac{14}{9}$$

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

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

$$b) \frac{15}{22} \div \frac{3}{11}$$

$$= \frac{15}{22} \times \frac{11}{3}$$

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

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

$$d) \frac{57}{69} \div \frac{19}{115}$$

$$= \frac{3 \times 19}{69} \times \frac{115}{19}$$

$$= \frac{3 \times 5}{69}$$

$$= \frac{15}{69}$$

Rule for Dividing Fractions is:

Flip second fraction and Multiply

$$\begin{aligned} & \frac{7}{8} \div \frac{1}{3} \\ &= \frac{7}{8} \times \frac{3}{1} \\ &= \frac{21}{8} \\ &= 2\frac{5}{8} \end{aligned}$$

Dividing Mixed Fractions

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

$$= \frac{19}{5} \div \frac{5}{3}$$

$$= \frac{19}{5} \times \frac{3}{5}$$

$$= \frac{57}{25}$$

$$= 2\frac{7}{25}$$

Step 1) Change to Improper

Step 2) Flip 2nd fraction and Multiply

Step 3) Reduce

When the division involves mixed numbers, change the mixed numbers to improper fractions first.

Try the following on your own:

$$(a) \frac{4}{5} \div \frac{7}{12}$$

$$(b) 1 \frac{2}{3} \div \frac{7}{8}$$

$$= \frac{5}{3} \div \frac{7}{8}$$

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

$$= \frac{40}{21} = 1 \frac{19}{21}$$

$$(c) 6 \div \frac{2}{7}$$

$$\frac{6}{1} \times \frac{7}{2}$$

$$\frac{42}{2} = \frac{21}{1} = 21$$

$$(d) 2 \frac{1}{6} \div \frac{5}{9}$$

$$(e) \frac{11}{15} \div 3 \frac{2}{3}$$

$$(f) 5 \frac{2}{5} \div 2 \frac{1}{8}$$

$$= \frac{13}{6} \div \frac{5}{9}$$

$$= \frac{13}{6 \div 3} \times \frac{9 \div 3}{5}$$

$$= \frac{13 \times 3}{2 \times 5}$$

$$= \frac{39}{10}$$

$$= 3 \frac{9}{10}$$

When the division involves mixed numbers, change the mixed numbers to improper fractions first.

Try the following on your own:

$$(a) \frac{4}{5} \div \frac{7}{12}$$

$$= \frac{4}{5} \times \frac{12}{7}$$

$$= \frac{48}{35}$$

$$= 1 \frac{13}{35}$$

$$(d) 2\frac{1}{6} \div \frac{5}{9}$$

$$= \frac{13}{6} \div \frac{5}{9}$$

$$= \frac{13}{6} \times \frac{9}{5}$$

$$= \frac{13 \times 9}{26 \times 5}$$

$$= \frac{13 \times 3}{2 \times 5}$$

$$= \frac{39}{10}$$

$$= 3 \frac{9}{10}$$

$$(b) 1\frac{2}{3} \div \frac{7}{8}$$

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

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

$$= \frac{40}{21} = 1 \frac{19}{21}$$

$$(e) \frac{11}{15} \div 3\frac{2}{3}$$

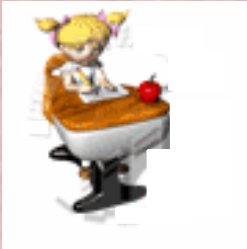
$$(c) 6 \div \frac{2}{7}$$

$$6 \times \frac{7}{2}$$

$$\frac{42}{2} = \frac{21}{1} = 21$$

$$(f) 5\frac{2}{5} \div 2\frac{1}{8}$$

#3



$$2\frac{1}{4} \div \frac{5}{1} =$$

$$= \frac{9}{4} \div \frac{5}{1}$$

$$= \frac{9}{4} \times \frac{1}{5}$$

$$= \frac{9}{20}$$

Class / Homework

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#6 (no estimations just use the rule)

#10

#11

#12

#13

#16 (Just divide no estimations)

