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Math 8 HW Section 2.3 Multiplying Mixed Fractions

1. Convert each of the following to improper fractions

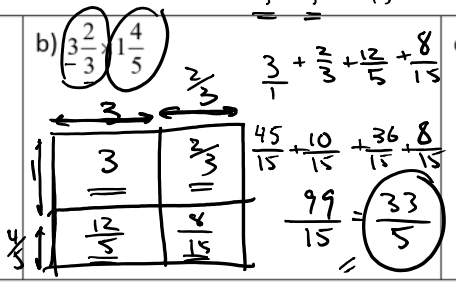
a) $2\frac{1}{4}$ $\frac{9}{4}$	b) $3\frac{3}{5}$ $\frac{18}{5}$	c) $6\frac{5}{7}$ $\frac{47}{7}$	d) $-3\frac{1}{6}$ $-\frac{19}{6}$	e) $4\frac{7}{8}$ $\frac{39}{8}$	f) $7\frac{3}{5}$ $\frac{36}{5}$
g) $-4\frac{3}{11}$ $\frac{-47}{11}$	h) $-3\frac{6}{13}$ $\frac{-45}{13}$	i) $3\frac{2}{20}$ $\frac{62}{20}$	j) $3\frac{8}{16}$ $\frac{56}{16}$	k) $3\frac{8}{12}$ $\frac{44}{12}$	L) $-3\frac{4}{15}$ $\frac{-49}{15}$

2. Draw a model to determine each product:

a) $1\frac{1}{2}\times 2\frac{3}{4}$

1	1	$\frac{3}{4}$
0.5	0.5	$\frac{3}{8}$

b) $3\frac{2}{3}\times 1\frac{4}{5}$ $\frac{11}{3}\times\frac{9}{5}=\frac{99}{15}$

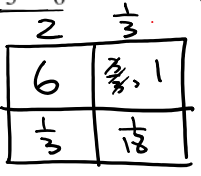


$\frac{3}{1}+\frac{2}{3}+\frac{12}{5}+\frac{8}{15}$

$\frac{45}{15}+\frac{10}{15}+\frac{36}{15}+\frac{8}{15}$

$\frac{99}{15}=\frac{33}{5}$

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



$6+1+\frac{1}{3}+\frac{1}{18}$

$\frac{7}{1}+\frac{1}{3}+\frac{1}{18}$ $\frac{70}{51}$

$\frac{126}{18}+\frac{6}{18}+\frac{1}{18}$

$=\frac{133}{18}$

3. Multiply each of the following or solve for the missing value in the box:

a) $1\frac{2}{3}\times 2\frac{1}{10}=\frac{5}{3}\times\frac{21}{10}=\frac{7}{2}$

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

b) $3\frac{2}{3}\times 2\frac{1}{22}=\frac{11}{3}\times\frac{45}{22}$

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

$7\frac{1}{2}$

c) $1\frac{2}{5}\times 3\frac{3}{4}=\frac{7}{5}\times\frac{15}{4}=$

$\frac{7}{1}\times\frac{3}{4}=\frac{21}{4}=5\frac{1}{4}$

d) $2\frac{4}{7}\times 2\frac{4}{15}=\frac{18}{7}\times\frac{34}{15}$

$=\frac{6}{7}\times\frac{34}{5}=\frac{204}{35}=$

$2\frac{34}{35}$

e) $3\frac{3}{6}\times 3\frac{3}{14}=\frac{21}{6}\times\frac{45}{14}$

$\frac{45}{4}$

f) $5\frac{1}{4}\times 7\frac{1}{3}$

$\frac{21}{4}\times\frac{22}{3}=\frac{77}{2}$

g) $2\frac{3}{4}\times 1\frac{1}{3}\times 3\frac{1}{11}=\frac{34}{11}$

$\frac{1}{1}\times\frac{1}{3}\times\frac{34}{1}=\frac{34}{3}$

$=11\frac{1}{3}$

h) $4\frac{2}{5}\times 5\frac{1}{3}\times 3\frac{1}{8}$

$\frac{22}{5}\times\frac{16}{3}\times\frac{25}{8}=$

$\frac{220}{3}=73\frac{1}{3}$

i) $1\frac{2}{3}\times\square=\frac{3}{4}$

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

$\frac{5}{3}\times\frac{9}{20}=\frac{3}{4}$

j) $8\frac{2}{3}\times\square=39$

$\frac{26}{3}\times\frac{3\times 39}{26\times 1}=39$

$\frac{26}{3}\times\frac{9}{2}=39$

k) $3\frac{3}{4}\times\square=3\frac{1}{2}$

$\frac{15}{4}\times\frac{4\times 7}{15\times 2}=\frac{7}{2}$

l) $2\frac{1}{3}\times\square=4\frac{6}{7}$ $\square=2\frac{4}{49}$

$\frac{7}{3}\times\frac{3}{7}\times\frac{34}{7}=\frac{16}{7}$

$\frac{3}{7}\times\frac{34}{7}=\frac{102}{49}=2\frac{4}{49}$

Marked by: Irwin and Ashley are the best!

4. A plant grew $1\frac{1}{8}$ of an inch every day. How many inches will it grow in $10\frac{1}{2}$ days?

① $1\frac{1}{8} = \frac{9}{8}$ ② $10\frac{1}{2} = \frac{21}{2}$ ③ $\frac{9}{8} \times \frac{21}{2} = \frac{189}{16}$ =

5. David ran $2\frac{1}{3}$ laps around a track in 1 hour. How many laps can he run in $3.75h$ if he maintained the same speed?

① $2\frac{1}{3} = \frac{7}{3}$ ② $3\frac{3}{4} = \frac{15}{4}$ ③ $\frac{7}{3} \times \frac{15}{4}$ $= \frac{35}{4} = 8\frac{3}{4}$

6. Mark makes $\$20\frac{3}{4}$ an hour at his job. He works $8\frac{1}{3}$ hours every day. If Mark can only save $\frac{3}{4}$ of the money he makes, how many days will he need to save $2000?

① $20\frac{3}{4} \times 8\frac{1}{3} \times \frac{3}{4} = \frac{83 \times 25}{16}$ $= \frac{83}{4} \times \frac{25}{3} \times \frac{3}{4}$ $= 129.6875$

② $\frac{2000}{129.6875} = 11.78$ days

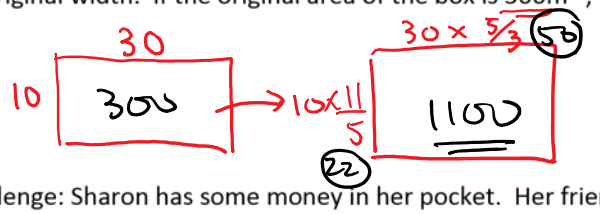
12 DAYS

7. Jason needs $2\frac{1}{2}$ tanks of gas to drive from Vancouver to Portland. Each tank of gas will cost him $\$\frac{98}{3}$. How much will it cost him to drive from Vancouver to Portland?

① $2\frac{1}{2} \times \frac{98}{3}$ $= \frac{245}{3} = 81\frac{2}{3} = \$81.67$

$\frac{5}{2} \times \frac{98}{3}$ $\frac{5}{3}$

8. The length of a box is increased by $1\frac{2}{3}$ times its original length and the width is increased by $2\frac{1}{5}$ times its original width. If the original area of the box is $300m^2$, then what is the area of the new box?



10 $30 \times \frac{5}{3} = 50$

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

9. Challenge: Sharon has some money in her pocket. Her friend Wendy has $1\frac{1}{2}$ times as much as Sharon. Another friend Chelsea has $1\frac{2}{3}$ times as much money as Wendy. Altogether they have $200. How much money does Sharon have?

Mr Young eats a lot

SHARON	WENDY	CHELSEA
x (40)	$\frac{3x}{2}$ (60)	$\frac{35}{2} \cdot \frac{5}{3} = \frac{5x}{2}$ (100)

$x + 1.5x + 2.5x = 200$

$5x = 200$

$x = 40$