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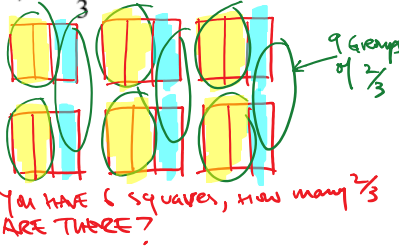
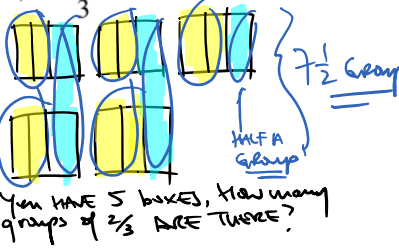
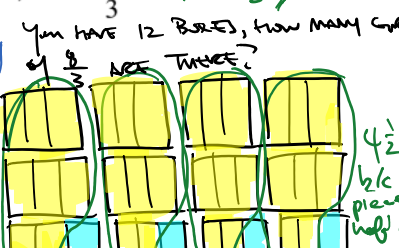
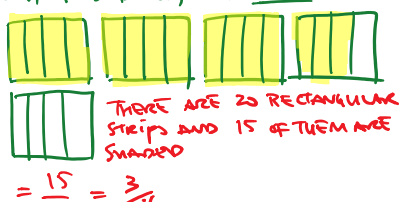
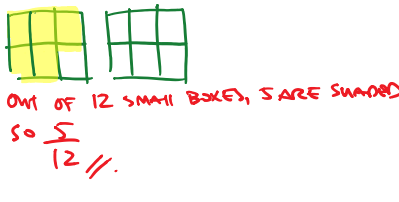
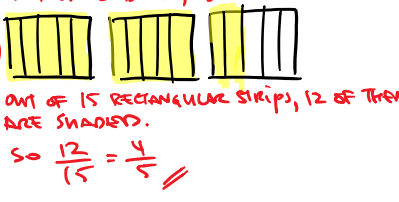
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Math 8 Section 2.4 Dividing Fractions and Integers Using Manipulatives:

1. Divide the following fractions:

a) $8 \div \frac{4}{5}$ $2 \cancel{8} \times \frac{5}{\cancel{4}_1}$ $= 10 //$	b) $6 \div \frac{2}{3}$ $3 \cancel{6} \times \frac{3}{\cancel{2}_1}$ $= 9 //$	c) $20 \div \frac{35}{3}$ $4 \cancel{20} \times \frac{3}{\cancel{35}_7}$ $= \frac{12}{7}$	d) $30 \div \frac{15}{4}$ $2 \cancel{30} \times \frac{4}{\cancel{15}_3}$ $= 8 //$	e) $55 \div \frac{15}{2}$ $11 \cancel{55} \times \frac{2}{\cancel{15}_3}$ $= \frac{22}{3}$
f) $\frac{16}{5} \div 4$ $4 \cancel{16} \times \frac{1}{\cancel{4}_1}$ $= \frac{4}{5} //$	g) $\frac{35}{4} \div 7$ $5 \cancel{35} \times \frac{1}{\cancel{7}_1}$ $= \frac{5}{4} //$	h) $3 \frac{3}{4} \div 5$ $\frac{15}{4} \div 5$ $= \frac{3}{4} \times \frac{1}{5}$ $= \frac{3}{20}$	i) $5 \frac{1}{4} \div 21$ $\frac{21}{4} \div 21$ $= \frac{1}{4} \times \frac{1}{21}$ $= \frac{1}{84}$	j) $6 \frac{2}{3} \div 8$ $\frac{20}{3} \div 8$ $= \frac{20}{3} \times \frac{1}{8}$ $= \frac{5}{6}$
k) $\frac{20}{9} \div \frac{15}{3}$ $4 \cancel{20} \times \frac{3}{\cancel{15}_3}$ $= \frac{4}{9}$	l) $4 \frac{2}{3} \div 1 \frac{2}{7}$ $\frac{14}{3} \div \frac{9}{7}$ $\frac{14}{3} \times \frac{7}{9}$ $= \frac{98}{27} //$	m) $\frac{16}{21} \div \frac{24}{35}$ $2 \cancel{16} \times \frac{35}{\cancel{24}_3}$ $= \frac{10}{9} //$	n) $6 \frac{3}{4} \div \frac{3}{16}$ $\frac{27}{4} \div \frac{3}{16}$ $9 \cancel{27} \times \frac{16}{\cancel{3}_1} = 36 //$	o) $1 \frac{10}{15} \div \frac{45}{81}$ $1 \cancel{10} \times \frac{81}{\cancel{45}_3}$ $= \frac{1}{3} \times \frac{81}{1} = 27 //$

2. Draw a model to represent each of the following:

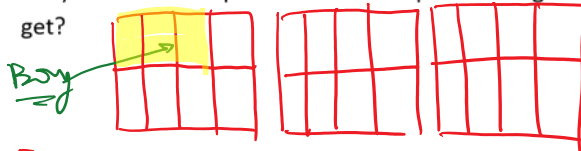
a) $6 \div \frac{2}{3} = 9 //$  You have 6 squares, how many $\frac{2}{3}$ are there?	b) $5 \div \frac{2}{3} = 7 \frac{1}{2} = \frac{15}{2} //$  You have 5 boxes, how many groups of $\frac{2}{3}$ are there?	c) $12 \div 2 \frac{2}{3} = 4 \frac{1}{2} = \frac{9}{2} //$  You have 12 boxes, how many groups of $2 \frac{2}{3}$ are there?
d) $3 \frac{3}{4} \div 5 = \frac{3}{4}$  Out of 5 boxes, 3 are shaded. There are 20 rectangular strips and 15 of them are shaded. $= \frac{15}{20} = \frac{3}{4}$	e) $\frac{5}{6} \div 2 = \frac{5}{12}$  Out of 2 boxes, 5/6 of a box is shaded. So $\frac{5}{12} //$	f) $\frac{12}{5} \div 3$  Out of 3 boxes, 12/5 of a box are shaded. Out of 15 rectangular strips, 12 of them are shaded. So $\frac{12}{15} = \frac{4}{5} //$

3. Rick has a string 60 meters. He cuts the string into pieces that are $\frac{2}{3}$ of a meter long. How many pieces will he have?

$$\# \text{ of pieces} = 60 \div \frac{2}{3}$$

$$= 60 \times \frac{3}{2} = 90 \text{ pieces} //$$

4. Sally and her friends bought three pizzas, with eight slices each. One of the boys ate 3 slices and went home. They now need to split the rest of the pizza amongst six people. What fraction of a pizza does each person get?



- 3 boxes are three pizzas.
- each pizza cut into 8 pieces.
- 21 pieces left

each person gets:

$$\frac{21}{8} \div 3$$

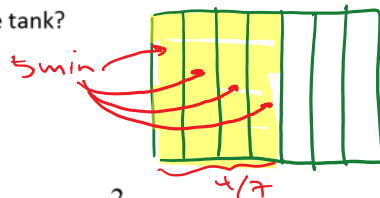
$$= \frac{21}{8} \times \frac{1}{3} = \frac{7}{8} \text{ of a pizza}$$

5. Michael has a piece of tape $7\frac{4}{5}$ units long. If he cuts it into pieces each $\frac{3}{5}$ of a unit long, how many pieces will he have?

$$7\frac{4}{5} \div \frac{3}{5}$$

$$= \frac{39}{5} \times \frac{5}{3} = 13 \text{ pieces} //$$

6. A high speed pump can empty $\frac{4}{7}$ of a tank in 20 minutes. How many minutes would it take the pump to empty an entire tank?



each strip is 5 min.

7 strips $\therefore 7 \times 5$

$$= 35 \text{ min} //$$

so 35 more minutes to empty the rest of the tank.

7. A cookie recipe requires $1\frac{2}{3}$ cups of flour to make 10 cookies. If Sarah has 18 cups of flour, how many cookies can she make?

$$18 \div 1\frac{2}{3} \times 10$$

$$18 \div \frac{5}{3} \times 10$$

$$18 \times \frac{3}{5} \times 10$$

$$= 18 \times \frac{3}{5} \times \frac{10}{1}$$

$$= 18 \times 6$$

$$= 108 \text{ cookies} //$$

8. Challenge: Evaluate the following: $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}}$

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

$1 + \frac{1}{2}$ is circled, with an arrow pointing to $\frac{3}{2}$.

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

$\frac{1}{\frac{3}{2}}$ is circled, with an arrow pointing to $\frac{2}{3}$.

③ $1 + \frac{1}{1 + \frac{2}{3}}$

$1 + \frac{2}{3}$ is circled, with an arrow pointing to $\frac{5}{3}$.

④ $1 + \frac{1}{\frac{5}{3}}$

$\frac{1}{\frac{5}{3}}$ is circled, with an arrow pointing to $\frac{3}{5}$.

⑤ $1 + \frac{3}{5}$

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