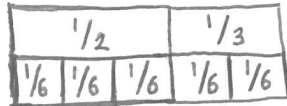


University of South Carolina  
 Math 221: Math for Elementary Educators  
 Instructor: Austin Mohr  
 Section 001  
 Spring 2010

Quiz 4

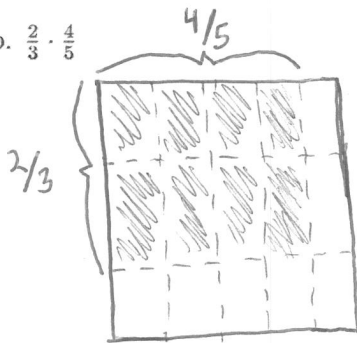
1. Draw a picture to represent each of the following. Where necessary, show how you break down one fraction into smaller pieces (such as when you find a common denominator).

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



$$\frac{1}{2} + \frac{2}{3} = \frac{5}{6}$$

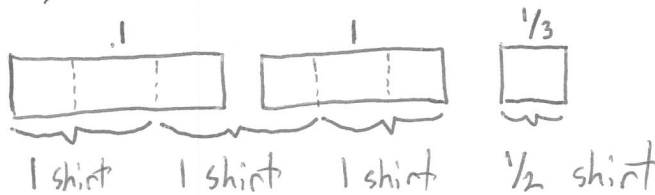
b.  $\frac{2}{3} \cdot \frac{4}{5}$



$$\frac{2}{3} \cdot \frac{4}{5} = \frac{8}{15}$$

← shaded  
← total

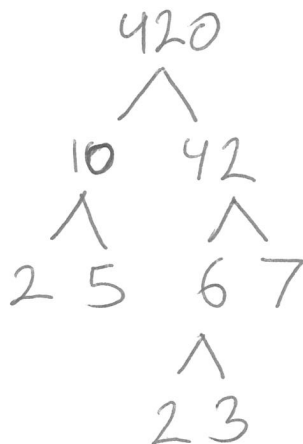
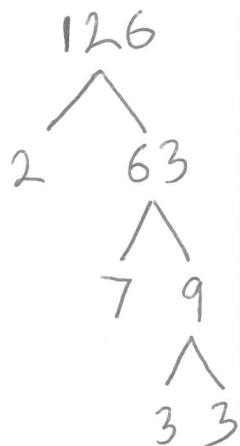
c.  $2\frac{1}{3} \div \frac{2}{3}$  (Hint: Think of this as having  $2\frac{1}{3}$  yards of fabric and each shirt requires  $\frac{2}{3}$  of a yard to make.)



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

↑            ↑            ↑  
 fabric      yds per      shirts  
                  shirt

2. Recall that the Fundamental Theorem of Arithmetic states that every number can be factored uniquely into primes. Use this fact to reduce  $\frac{126}{420}$  as much as possible. (Hint: Factor the numerator and denominator into primes.)



$$\frac{126}{420} = \frac{\cancel{2} \cdot \cancel{3} \cdot 3 \cdot 7}{\cancel{2} \cdot 2 \cdot \cancel{3} \cdot 5 \cdot 7}$$

$$= \frac{3}{2 \cdot 5}$$

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