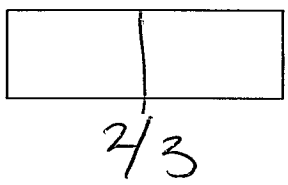
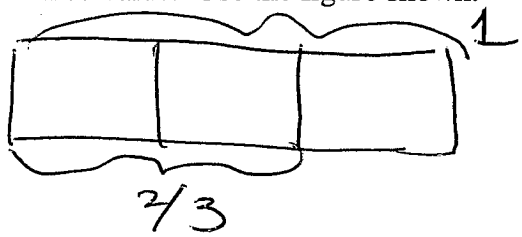
Math 210A
Test 4
Name Key Grade _____/75

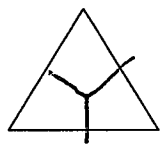
Read all directions and follow them carefully. Use back of paper if necessary. Relax, breathe, and good luck. ☺

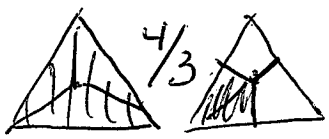
1. (6 points) Draw the figure that has the specified value. Use the figure shown.

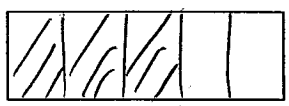
a. 

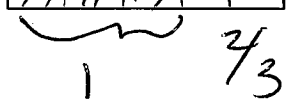
= 2/3 ; show 1



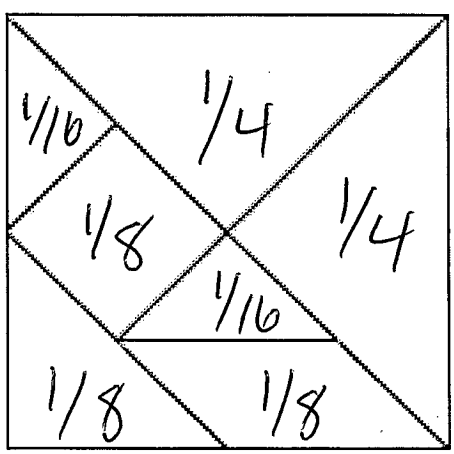
b.  = 1 ; show 4/3



c.  = 1 2/3 ; show 1



2. (7 points) The illustration below is a Chinese Tangram. It is a square cut into seven pieces. Inside each piece write the fraction that it represents given that the large square is one whole.



3. (10 points) Order the fractions below from smallest to largest using comparisons to 0, ½, or 1. ***Show your comparison as smaller or larger than one of the fractions above*** (and by how much), then place the fractions in order.

5/8 Comparison: more than 1/2 by 1/8

4/9 Comparison: ~~more~~ less than 1/2 by 5/9 = 1/8

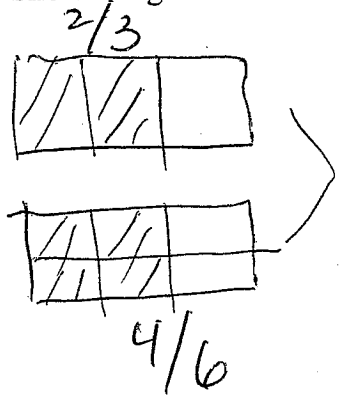
5/12 Comparison: less than 1/2 by 1/12

13/14 Comparison: less than 1 by 1/14

1/5 Comparison: more than zero by 1/5

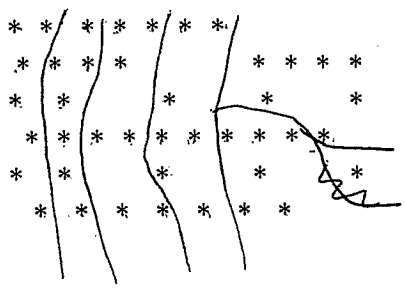
ORDER: 1/5, 5/12, 4/9, 5/8, 13/14

4. (4 points) Show using a model of some type that $\frac{2}{3}=\frac{4}{6}$.



both equal 1

5. (4 points) Josie has glow in the dark stars on the ceiling of her bedroom. If the picture below shows 6/7 of the stars that she has on her ceiling, how many stars are on Josie's ceiling?



42 stars

break into 6 parts

add 1 more part

42 + 7 = 49

Josie has 49 stars on her ceiling.

6. (2 points part a + 6 points each) Use the following pattern blocks to solve each problem pictorially. ***Use two hexagons together as one whole.*** Then, check your answer by solving each problem using the rules of operations on fractions. **Each problem is to be done twice (pictorially and computationally).** Make sure your pictures clearly show the operation being done.

a. Determine the fractional amount of the whole that each pattern block represents:

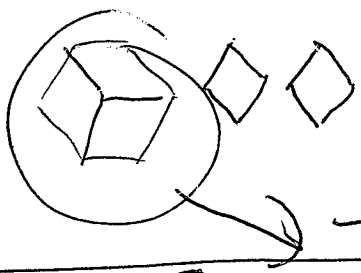
= 1/2

= 1/4

= 1/6

= 1/12

b. $\frac{5}{6}-\frac{1}{2}$



$= \diamond\diamond = \frac{2}{6} = \frac{1}{3}$

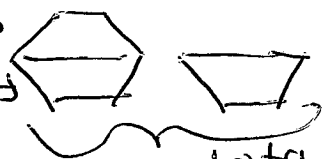
$-1/2$

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

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

$\frac{1}{2}$  break into 2 parts, take 3

two parts

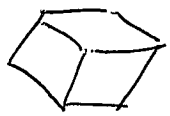


$= 3/4$

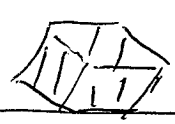
3 total

$\frac{3}{2}\times\frac{1}{2}=\frac{3}{4}$

d $\frac{1}{2}\div\frac{5}{6}$

 1/2

$\div$

 $\diamond\diamond$ take out $\frac{3}{5}$ (of $\frac{5}{6}$)

$\frac{1}{2}\div\frac{5}{6}=\frac{1}{2}\cdot\frac{6}{5}=\frac{6}{10}=\frac{3}{5}$

7. (3 points) Kyle gave 1/3 of his pizza to his friend Ryan, 2/5 of the pizza to his friend Sabrina, and 1/6 of his pizza to his dog. How much pizza did Kyle have left to eat?

$1 - \frac{1}{3} - \frac{2}{5} - \frac{1}{6} = \frac{30}{30} - \frac{10}{30} - \frac{12}{30} - \frac{5}{30} = \frac{3}{30} = \frac{1}{10}$

LCD = 30

1/10 pizza left

8. (3 points) Teresa had ¾ of a pizza left from her party. Her brother came over and ate 2/3 of what was left. How much pizza did her brother eat?

$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$

$\frac{1}{2}$ of a pizza eaten

9. (3 points) Laura was baking cookies. Each cookie recipe takes 2/3 cup of shortening. If Laura has 1 ¾ cup of shortening she wants to use up completely, how many recipes of cookies should she make? (Include any fractional parts in answer)

$1\frac{3}{4} \div \frac{2}{3} = \frac{7}{4} \cdot \frac{3}{2} = \frac{21}{8} = 2\frac{5}{8}$

$2\frac{5}{8}$ recipies

10. (3 points) Write a story problem (different from the problems above) that would lead to the calculation $4 \div \frac{1}{2}$.

You have 4 candy bars. Each smore takes 1/2 candy bar, How many smore's can you make

11. (3 points) Fill in the blanks with the amount referred to, either the whole (1) or the specific fraction.

$\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$

The 2/3 refers to: 3/4

The 3/4 refers to: whole

The 1/2 refers to: whole

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

The ½ refers to: whole

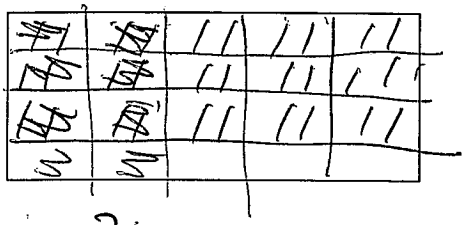
The 2/3 refers to: whole

The 3/4 refers to: 2/3

12. (6 points) Show how to model and solve the following problem.
The last Aztec game at SDSU had a great turn out. Three-fourths of the stadium was filled with fans. Two-fifths of the fans were students at SDSU. What fraction of the stadium was filled by students from SDSU?

2/5

3/4

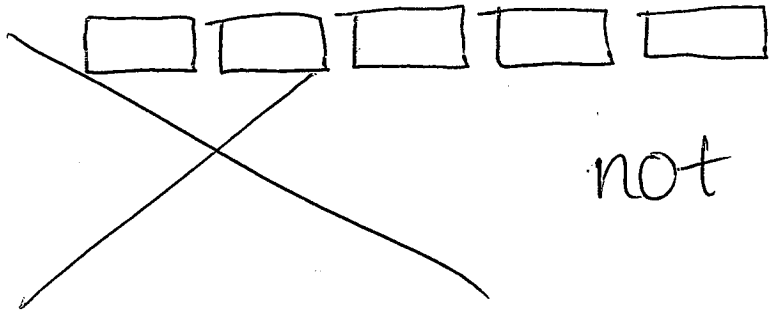


double shaded 6/20

6/20 = 3/10 of the stadium was filled with SDSU student.

13. (4 points) Explain how you would use the red and white Cuisenaire rods to solve the problem: $\frac{5}{7} \div \frac{1}{2}$. (Recall 2 white = 1 red)

let red = 1/7



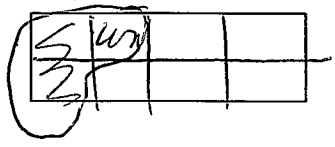
= 5/7

not graded

14. Bonus (4 points)

a. Shade in 3/2 of ¼ of this rectangle:

1/4



3/2

b. Locate the ¼ and label it in some way. It is ¼ of what quantity? whole

c. Locate the 3/2 and label it in some way. It is 3/2 of what quantity? 1/4

d. The shaded part is what fraction 3/8 of what quantity? whole