

Math 247 Practice for test 1

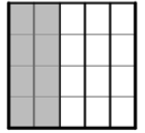
Problems you might be asked to solve:

1. Show how to numerically simplify the fraction  $\frac{60}{75}$ 
  - a. by factoring
  - b. By dividing out a bit at a time
  - c. By dividing by the least common factor
2. Show how to find the Least Common Denominator for these fractions by listing multiples (or some variation of listing multiples). Use your LCD to find the sum:  $\frac{7}{8} + \frac{5}{14}$
3. Show how to find the Least Common Denominator using factoring for these fractions. Use your LCD to find the difference:  $\frac{25}{42} - \frac{23}{90}$
4. Multiply these fractions and simplify (you can simplify as you go or at the end):  $\frac{35}{36} \times \frac{66}{98}$
5. Multiply mixed numbers  $3\frac{1}{4} \times 2\frac{3}{5}$
6. Bob had  $\frac{3}{4}$  of a cup of milk. He drank  $\frac{2}{3}$  of a cup of it. How much milk is left?
7. Alice had  $\frac{2}{3}$  of a lb of peanuts. She ate  $\frac{1}{4}$  of them. How much did Alice eat?
8. Sam had  $\frac{3}{4}$  of a lb of Legos. He got another  $\frac{1}{2}$  lb of Legos for his birthday. How many Legos does he have now?
9. Sandra had  $\frac{4}{5}$  of a foot of licorice rope. She gave  $\frac{1}{3}$  of it to Kim. How much does she have left?

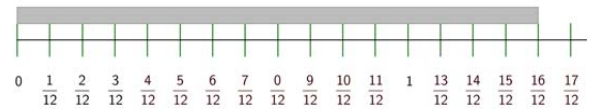
Concepts and process you might be asked to explain

10. Show and explain how to draw  $\frac{11}{6}$ 
  - a. on a number line
  - b. on a circle diagram
  - c. on a rectangular diagram
11. Explain how to compare using size and number of unit fractions
  - a.  $\frac{7}{10}$  and  $\frac{7}{11}$
  - b.  $\frac{13}{9}$  and  $\frac{14}{9}$
  - c.  $\frac{8}{5}$  and  $\frac{7}{6}$

12. Find an equivalent fraction for  $\frac{4}{5}$  using a
  - a. on a number line
  - b. on a circle diagram
  - c. on a rectangular diagram



13. Use multiplication to find and explain the equivalent fractions shown in this diagram:
14. Use grouping and division to find a simplified version of the fraction shown in this diagram:



15. Use a diagram and multiplication to find equivalent fractions with a common denominator for  $\frac{4}{5}$  and  $\frac{3}{4}$
16. Explain what multiplication of fractions means by reasoning from what you know about multiplication of whole numbers.
17. Explain how to use the  $\frac{3}{4}$  of  $\frac{5}{9}$  interpretation with a diagram and multiplication to find the product  $\frac{3}{4} \times \frac{5}{9}$

Problems that you might be asked to write:

18. Write a word problem for  $\frac{3}{4} + \frac{5}{8}$
19. Write a word problem for  $\frac{4}{5} - \frac{2}{3}$  (take away)
20. Write a word problem for  $1\frac{3}{4} - \frac{2}{3}$
21. Write a word problem for  $\frac{4}{5} \times \frac{3}{8}$  (using anything except a “find the area of this rectangle” type problem)

Things on homework 3 to discuss:

Word problems:

Subtle distinctions:

- A. I have  $\frac{3}{4}$  of a bag of marbles, I give  $\frac{2}{5}$  of them to Nick. How many marbles do I have left?
- B. I have  $\frac{3}{4}$  of a bag of marbles, I give  $\frac{2}{5}$  of the marbles to Nick. How many marbles do I have left?
- C. I have  $\frac{3}{4}$  of a bag of marbles, I give  $\frac{2}{5}$  of the bag marbles to Nick. How many marbles do I have left?
- D. I have  $\frac{3}{4}$  of a bag of marbles, I give  $\frac{2}{5}$  of a bag marbles to Nick. How many marbles do I have left?

And

- E. I have  $\frac{3}{4}$  of a gallon of water, I pour  $\frac{2}{5}$  of it on my plants. How much water do I have left?
- F. I have  $\frac{3}{4}$  of a gallon of water, I pour  $\frac{2}{5}$  of the water on my plants. How much water do I have left?
- G. I have  $\frac{3}{4}$  of a gallon of water, I pour  $\frac{2}{5}$  of the gallon of water on my plants. How much water do I have left?
- H. I have  $\frac{3}{4}$  of a gallon of water, I pour  $\frac{2}{5}$  of a gallon of the water on my plants. How much water do I have left?

Please tell units in your answer.

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- I. I have  $\frac{4}{5}$  of a bag of donut holes. I gave  $\frac{2}{3}$  of my donut holes to Kari. How many donut holes did Kari get?
  - J. I have  $\frac{4}{5}$  of a bag of donut holes. I gave  $\frac{2}{3}$  of my bag of donut holes to Kari. How many donut holes did Kari get?
  - K. I have  $\frac{4}{5}$  of a bag of donut holes. I gave  $\frac{2}{3}$  of a bag of my donut holes to Kari. How many donut holes did Kari get?
  - L. A bag of wild rice weighs  $\frac{3}{8}$  lbs. I have  $\frac{5}{4}$  of a bag (I have  $1\frac{1}{4}$  bags) of wild rice. How much wild rice do I have?
  - M. A bowl holds  $\frac{3}{8}$  lb of cherries. My bowl is  $\frac{9}{8}$  full. How many cherries do I have?

2. Simplify the fraction  $\frac{42}{90}$  by factoring