Foundations of Algebra
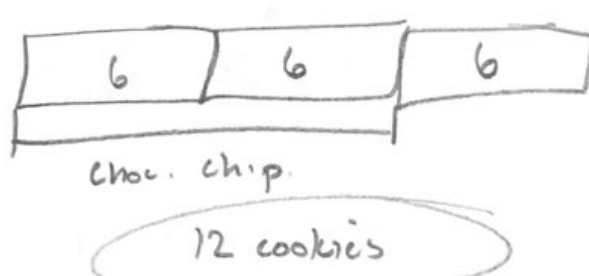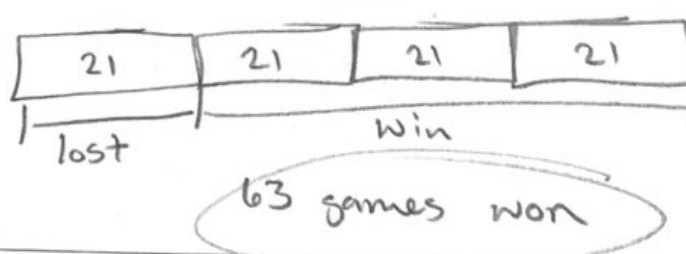**Review Guide**

Name: _Key_

Learning Goal 1.2 - Fractions

What I Need to Know	Things to Remember	Practice
1. Benchmark Fractions 10. Ordering Fractions	0, ½, 1 The bigger the denominator, the small the individual pieces are. Benchmark Fractions are helpful!	a. Determine if the following fractions are close to 0, equal to ½, little less than ½ (< ½), little more than ½ (> ½) , or close to 1: $\frac{1}{3}$ $\frac{3}{8}$ $\frac{7}{9}$ $\frac{5}{6}$ $\frac{11}{12}$ $\frac{2}{10}$ $\frac{9}{10}$ $\frac{1}{8}$ $\frac{2}{6}$ $\frac{6}{11}$ $\frac{1}{4}$ $\frac{3}{4}$ $\frac{4}{9}$ $\frac{3}{7}$ $\frac{3}{4}$ $\frac{3}{6}$ less than, less than, ✓, ✓, ✓, 0, ✓, 0, 0, more than, 0, ✓, less than, less than, ✓, ½
		a. Order from least to greatest: $\frac{4}{5}, \frac{4}{10}, \frac{4}{12}, \frac{4}{7}$ $\frac{4}{12}$ $\frac{4}{10}$ $\frac{4}{7}$ $\frac{4}{5}$	b. Order from least to greatest: $\frac{5}{9}, \frac{7}{13}, \frac{2}{7}, \frac{10}{11}$ $\frac{2}{7}$ $\frac{7}{13}$ $\frac{5}{9}$ $\frac{10}{11}$
2. Converting Between Improper and Mixed Numbers		a. Convert to improper fractions: $1\frac{3}{8}$ $\frac{11}{8}$ $7\frac{3}{4}$ $\frac{31}{4}$	b. Convert to mixed numbers: $\frac{27}{8}$ $3\frac{3}{8}$ $\frac{13}{5}$ $2\frac{3}{5}$
3. Operations with Fractions	Add & Subtract: Common Denominators Multiply: Multiply numerators & denominators Divide: Multiply by the reciprocal (complex fractions)	a. Add or Subtract: $\frac{3}{5} - \frac{1}{3} =$ $\frac{9}{15} - \frac{5}{15} = \boxed{\frac{4}{15}}$ $\frac{3}{5} + \frac{1}{4} =$ $\frac{12}{20} + \frac{5}{20} = \boxed{\frac{17}{20}}$ $2\frac{2}{3} - \frac{1}{4} = \frac{8}{3} - \frac{1}{4}$ $\frac{32}{12} - \frac{3}{12} = \boxed{\frac{29}{12}}$ $12\frac{1}{7} - 8\frac{2}{3} = \frac{85}{7} - \frac{26}{3}$ $\frac{255}{21} - \frac{182}{21} = \boxed{\frac{73}{21}}$	b. Multiply or Divide: $\frac{1}{2} \times \frac{4}{5} = \frac{4}{10} = \boxed{\frac{2}{5}}$ $1\frac{1}{3} \times \frac{3}{8} =$ $\frac{4}{3} \times \frac{3}{8} = \frac{12}{24} = \boxed{\frac{1}{2}}$ $\frac{2}{5} \div \frac{1}{6} =$ $\frac{2}{5} \times \frac{6}{1} = \boxed{\frac{12}{5}}$ $6\frac{4}{5} \div \frac{1}{2} =$ $\frac{34}{5} \times \frac{2}{1} = \boxed{\frac{68}{5}}$

12
24
36
48
60
72
84

85
× 3
255

$\frac{26}{\times 7}$
182

255
−182
73

5. Operations with Fractions (Word Problems)		a. A stack of board is 21 inches high. Each board is $1\frac{3}{4}$ inches thick. How many boards are there? $\frac{21}{1} \div \frac{7}{4}$ $^3\frac{21}{1} \times \frac{4}{7}_1 = \frac{12}{1} = \boxed{12}$	b. DJ Gabe is going to serve $\frac{1}{3}$ of a whole pizza to each guest at his party. If he expects 24 guests, how many pizzas will he need? $\frac{24}{1} \times \frac{1}{3} = \frac{24}{3} = \boxed{8 \text{ pizzas}}$
6. Decimals on a Number Line		c. $3\frac{1}{3}$ feet are cut off a board that is $12\frac{1}{4}$ feet long. How long is the remaining part of the board? $12\frac{1}{4} - 3\frac{1}{3}$ $\frac{49}{4} - \frac{10}{3} = \frac{39}{3} = \boxed{13}$	d. $\frac{3}{8}$ of the corn in the US is grown in Iowa. $\frac{1}{4}$ of it is grown is Nebraska. How much of the corn supply is grown in the two states? $\frac{3}{8} + \frac{1}{4} =$ $\frac{3}{8} + \frac{2}{8} = \boxed{\frac{5}{8}}$

14. Using Visuals to Solve Problems.		a. Draw a picture to solve the following: Out of 18 cookies, $\frac{2}{3}$ are chocolate chip. How many of the cookies are chocolate chip?
		
		$\frac{18}{3} = 6$
		
		    6 6 6
		
		Choc. chip.
		
		$\boxed{12 \text{ cookies}}$
		
		b. The New York Rangers hockey team won $\frac{3}{4}$ of their games last season. If they lost 21 games, how many games did they play in the entire season?
		
		  21 21 21 21
		
		lost Win
		
		$\boxed{63 \text{ games won}}$	