NS7-75 Relating Fractions, Ratios, and Percents

1. Write the number of boys (**b**), girls (**g**), and children (**c**) in each class.

a) There are 8 boys and 5 girls in a class. **b** _____ **g** _____ **c** _____

b) There are 4 boys and 7 girls in a class. **b** _____ **g** _____ **c** _____

c) There are 12 boys and 15 girls in a class. **b** _____ **g** _____ **c** _____

d) There are 9 girls in a class of 20 children. **b** _____ **g** _____ **c** _____

2. Write the number of boys, girls, and children in each class. Then write the fraction of children who are boys and the fraction who are girls in the boxes provided.

a) There are 5 boys and 6 girls in a class. **b** ___ $\square$ **g** ___ $\square$ **c** ___

b) There are 15 children in the class and 8 are boys. **b** ___ $\square$ **g** ___ $\square$ **c** ___

3. Fill in the missing numbers for each classroom.

	Ratio of boys to girls	Fraction of boys	Fraction of girls	Percentage of boys	Percentage of girls
a)	3 : 2	$\frac{3}{5}$	$\frac{2}{5}$	$\frac{3}{5}=\frac{60}{100}=60\%$	40%
b)	1 : 4				
c)		$\frac{3}{4}$			
d)				20%	
e)		$\frac{27}{50}$			
f)	9 : 16				
g)			$\frac{11}{20}$		
h)					35%
i)				44%	

4. Fill in the missing numbers for each classroom.

	Number of students	Fraction of boys	Fraction of girls	Number of boys	Number of girls
a)	20	$\frac{4}{5}$	$\frac{1}{5}$	$\frac{4}{5} \times 20 = 16$	4
b)	30	$\frac{1}{3}$			
c)	28		$\frac{3}{4}$		
d)	26	$\frac{7}{13}$			

5. Determine the number of girls and boys in each class.

a) There are 20 children and $\frac{2}{5}$ are boys.

b) There are 42 children and $\frac{3}{7}$ are girls.

c) There are 15 children.
The ratio of girls to boys is 3 : 2.

d) There are 24 children.
The ratio of girls to boys is 3 : 5.

e) There are 25 children and 60% are girls.

f) There are 28 children and 25% are boys.

6. For each question, say which classroom has more girls.

a) In classroom A, there are 40 children and 60% are girls.
In classroom B, there are 36 children. The ratio of boys to girls is 5 : 4.

b) In classroom A, there are 28 children. The ratio of boys to girls is 5 : 2.
In classroom B, there are 30 children and $\frac{3}{5}$ of the children are boys.

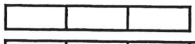
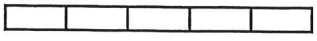
7. Ron and Ella shared $35 in the ratio 4 : 3. What fraction of the money did each person receive? What amount of money did each person receive?

8. Indra spent 1 hour doing homework. The chart shows the time she spent on each subject. Complete the chart. How did you find the amount of time Indra spent on math?

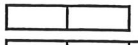
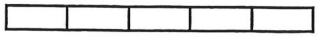
Subject	Time			
	Fraction of an hour	Percent	Decimal (hours)	Minutes
English	$\frac{1}{4}$		.25	15
Science		5%		
Math				
French			.20	

NS7-76 Using Linear Models to Solve Problems

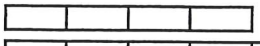
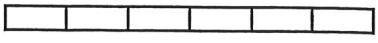
1. Fill in the blank.

a) A 
B 

Bar A is $\frac{3}{5}$ the length of B.

b) A 
B 

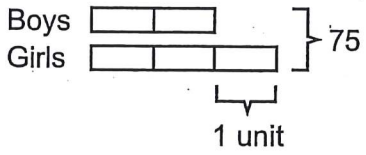
Bar A is _____ the length of B.

c) A 
B 

Bar A is _____ the length of B.

Problem: Seventy-five students are on a bus. There are $\frac{2}{3}$ as many boys as girls. How many boys are there?

Solution: The 5 units in the diagram represent the 75 students. So 1 unit represents $75 \div 5 = 15$ students. The bar representing boys is 2 units long. So there are $2 \times 15 = 30$ boys.

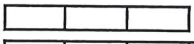


2. Find the number of boys by drawing a linear model, as in the example above.

a) There are 40 students on a bus. There are $\frac{3}{5}$ as many girls as boys.

b) There are 27 students on a bus. There are $\frac{2}{7}$ as many boys as girls.

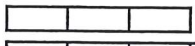
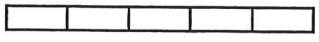
3. The bars below represent the number of red (r) and green (g) beads in a box. Fill in the blanks.

a) **g** 
r 

10 more red than green

1 unit = _____ beads

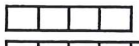
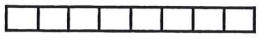
_____ beads altogether

b) **g** 
r 

8 more red than green

1 unit = _____ beads

_____ beads altogether

c) **g** 
r 

40 more red than green

1 unit = _____ beads

_____ beads altogether

4. Draw a model to find the number of red and green beads in each problem.

a) $\frac{2}{3}$ as many green beads as red beads

10 more red beads than green beads

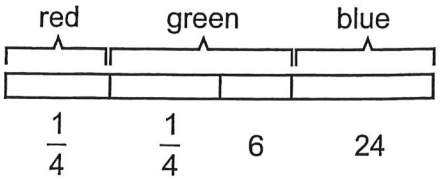
b) red beads : green beads = 3 : 5

6 more green beads than red beads

5. Solve the following problem using the diagram as a model.

One quarter of the fish in a tank are red. The rest are blue and green. There are 6 more green fish than red fish. There are 24 blue fish.

How many fish are in the tank?



6. Draw a model to solve this problem: One third of the fish in a tank are orange. The rest are yellow and blue. There are 9 more yellow fish than orange fish. There are 10 blue fish. How many fish are in the tank?