Lesson 5 & 6: Solving Problems by Finding Equivalent Ratios

Classwork

Exercises

1. The ratio of the number of people who own a smartphone to the number of people who own a flip phone is $4:3$. If 500 more people own a smartphone than a flip phone, how many people own each type of phone?

2. Sammy and David were selling water bottles to raise money for new football uniforms. Sammy sold 5 water bottles for every 3 water bottles David sold. Together they sold 160 water bottles. How many did each boy sell?

3. At a country concert, the ratio of the number of boys to the number of girls is $2:7$. If there are 250 more girls than boys, how many boys are at the concert?

4. The Business Direct Hotel caters to people who travel for different types of business trips. On Saturday night there is not a lot of business travel, so the ratio of the number of occupied rooms to the number of unoccupied rooms is $2:5$. However, on Sunday night the ratio of the number of occupied rooms to the number of unoccupied rooms is $6:1$ due to the number of business people attending a large conference in the area. If the Business Direct Hotel has 432 occupied rooms on Sunday night, how many unoccupied rooms does it have on Saturday night?

Lesson Summary

When solving problems in which a ratio between two quantities changes, it is helpful to draw a *before* tape diagram and an *after* tape diagram.

Problem Set

1. Last summer, at *Camp Okey-Fun-Okey*, the ratio of the number of boy campers to the number of girl campers was $8:7$. If there were a total of 195 campers, how many boy campers were there? How many girl campers?

2. The student-to-faculty ratio at a small college is $17:3$. The total number of students and faculty is 740. How many faculty members are there at the college? How many students?

3. The Speedy Fast Ski Resort has started to keep track of the number of skiers and snowboarders who bought season passes. The ratio of the number of skiers who bought season passes to the number of snowboarders who bought season passes is $1:2$. If 1,250 more snowboarders bought season passes than skiers, how many snowboarders and how many skiers bought season passes?

4. The ratio of the number of adults to the number of students at the prom has to be $1:10$. Last year there were 477 more students than adults at the prom. If the school is expecting the same attendance this year, how many adults have to attend the prom?