2010 Q11

11. The top of one tree is 16 feet higher than the top of another tree. The heights of the two trees are in the ratio 3 : 4. In feet, how tall is the taller tree?

(A) 48 **(B)** 64 **(C)** 80 **(D)** 96 **(E)** 112

11. **Answer (B):** The sum of the heights of the two trees can be divided into 7 parts where one part is 16 feet. The taller tree has 4 parts so its height is $4 \times 16 = 64$ feet.

2 / 4

1999 Q12

12. The ratio of the number of games won to the number of games lost(no ties) by the Middle School Middies is 11/4. To the nearest whole percent, what percent of its games did the team lose?

(A) 24 **(B)** 27 **(C)** 36 **(D)** 45 **(E)** 73

12. **Answer (B):** The Won/Lost ratio is 11/4 so, for some number N, the team won $11N$ games and lost $4N$ games. Thus, the team played $15N$ games and the fraction of games lost is $\frac{4N}{15N} = \frac{4}{15} \approx 0.27 = 27\%$.

3 / 4

2011 Q14

14. There are 270 students at Colfax Middle School, where the ratio of boys to girls is 5 : 4. There are 180 students at Winthrop Middle School, where the ratio of boys to girls is 4 : 5. The two schools hold a dance and all students from both schools attend. What fraction of the students at the dance are girls?

(A) $\frac{7}{18}$ **(B)** $\frac{7}{15}$ **(C)** $\frac{22}{45}$ **(D)** $\frac{1}{2}$ **(E)** $\frac{23}{45}$

14. **Answer (C):** The number of girls at the dance is $\frac{4}{9}(270)+\frac{5}{9}(180) = 120+100 = 220$. So the fraction of the students that are girls is $\frac{220}{450} = \frac{22}{45}$.

4 / 4

2009 Q15

15. A recipe that makes 5 servings of hot chocolate requires 2 squares of chocolate, $\frac{1}{4}$ cup sugar, 1 cup water and 4 cups milk. Jordan has 5 squares of chocolate, 2 cups of sugar, lots of water and 7 cups of milk. If she maintains the same ratio of ingredients, what is the greatest number of servings of hot chocolate she can make?

(A) $5\frac{1}{8}$ **(B)** $6\frac{1}{4}$ **(C)** $7\frac{1}{2}$ **(D)** $8\frac{3}{4}$ **(E)** $9\frac{7}{8}$

15. **Answer (D):** Jordan has 5 squares of chocolate, which is $2\frac{1}{2}$ times the amount the recipe calls for. She has $2 \div \frac{1}{4} = 8$ times the amount of sugar and $\frac{7}{4} = 1\frac{3}{4}$ times the amount of milk necessary to make the recipe. So the amount of milk limits the number of servings. Jordan cannot make more than $5\left(1\frac{3}{4}\right) = 5\left(\frac{7}{4}\right) = \frac{35}{4} = 8\frac{3}{4}$ servings of hot chocolate.