NAME _____ DATE _____

Math and History Application

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HISTORY   *Chu Chang Suan Shu (Nine Chapters on the Mathematical Art)* was written about 2000 years ago during the Han Dynasty. The Chinese mathematician Shang Tshang probably assembled this text by making use of older works already in existence. *Chu Chang Suan Shu* is considered one of the oldest mathematical textbooks. The book is a collection of many mathematicians' efforts thoughout the centuries. The original book is believed to have been destroyed in the Burning of the Books of 213 B.C. *Nine Chapters on the Mathematical Art* is also the first textbook to show methods for solving simultaneous linear equations.

The text contains 246 questions with general rules for solutions. The topics focus upon applied mathematics in engineering and administration. Some of the chapter titles are surveying land, engineering works, and impartial taxation. The problems are varied and include weights and measure, payment for livestock, and construction of canals.

MATH   Chapter eight is titled *Fang cheng* (rectangular arrays). The topics in this chapter include simultaneous linear equations, the concept of positive and negative numbers, and addition and subtraction of positive and negative numbers. The setup and solutions for the simultaneous linear equations are similar those in your textbook.

1. Solve the system of equations.

$7x - 8y = -21$

$3x + 2y = 29$

2. You plant a 4-foot maple tree that grows at a rate of 6 inches per year and a 2-foot birch tree that grows at a rate of 8 inches per year. In how many years after planting will the two trees be the same height? How tall will each tree be?

3. Three pieces of a metal A and two pieces of a metal B combined weigh 100 pounds. The difference between one piece of metal A and one piece of metal B is five pounds. How much does one piece of metal A weigh? How much does one piece of metal B weigh?