# Ms. Peters Algebra

Heather Peters

June 6, 2022

**Problem 1.** The cost of petrol rises by 2 cents a liter. last week a man bought 20 liters at the old price. This week he bought 10 liters at the new price. Altogether, the petrol costs $9.20. What was the old price for 1 liter?

*Proof.* □

**Problem 2.** One ounce of solution X contains only ingredients a and b in a ratio of 2:3. One ounce of solution Y contains only ingredients a and b in a ratio of 1:2. If solution Z is created by mixing solutions X and Y in a ratio of 3:11, then 2520 ounces of solution Z contains how many ounces of a?

*Proof.* □

**Problem 3.** A commercial airplane flying with a speed of 700 mi/h is detected 1000 miles away with a radar. Half an hour later an interceptor plane flying with a speed of 800 mi/h is dispatched. How long will it take the interceptor plane to meet with the other plane?

*Proof.* □

**Problem 4.** You are raising money for a charity. Someone made a fixed donation of 500. Then, you require each participant to make a pledge of 25 dollars. What is the minimum amount of money raised if there are 224 participants.

*Proof.* □

**Problem 5.** The ratio of girls to boys in class is 9 to 7 and there are 80 students in the class. How many girls are in the class?

*Proof.* □

**Problem 6.** Vera and Vikki are sisters. Vera is 4 years old and Vikki is 13 years old. What age will each sister be when Vikki is twice as old as Vera?

*Proof.* □

**Problem 7.** The sum of two positive numbers is 4 and the sum of their squares is 28. What are the two numbers?

*Proof.* □



**Problem 8.** A can do a work in 14 days and working together A and B can do the same work in 10 days. In what time can B alone do the work?

*Proof.* □



**Problem 9.** Teachers divided students into groups of 3. Each group of 3 wrote a report that had 9 pictures in it. The students used 585 pictures altogether. How many students were there in all?

*Proof.* □



**Problem 10.** There are 40 pigs and chickens in a farmyard. Joseph counted 100 legs in all. How many pigs and how many chickens are there?

*Proof.* □