

Year 7 Mathematics

Problem Solving with Equations

All questions must be completed by solving an appropriate equation, with a defined variable.

1. A fruit grower had a number of apples. He gave a third of them to one neighbour and a quarter to another neighbour. If he has 35 apples left, how many did he start with?

2. A farm has ducks and pigs. There are 8 more ducks than pigs and between all the ducks and pigs the farmer counts 70 legs. How many ducks and how many pigs are there?

3. A maths test consists of ten questions. Ten marks are given for each correct answer and three marks are deducted for each incorrect answer. If a student answered all questions and scored 61, how many correct answers did he have?

4. Five friends decide to buy a horse to train, sharing the cost equally. Later on, four other friends join in on the venture and pay their share of the purchase price. If this results in a saving of \$800 for each of the five original buyers, how much did the horse cost?

5. If $\frac{3}{2 - \frac{x}{2}} = 2$, what is the value of x ?

6. Rearrange $P = 1 - \sqrt{\frac{Q}{R}}$ to make Q the subject.

7. Abby drove from town A to B in 3 hours. Billy left town A at the same time but drove 5 km/h more slowly and arrived at town B 20 minutes later than Abby. What is the distance between towns A and B in kilometres? Note that: distance = speed \times time .

8. Rectangle $PQRS$ is divided into 9 squares, each of different size, as shown in the figure, albeit not to scale. All of the squares have whole number side lengths, with the smallest being a 2×2 square. The side length of the next smallest square is labelled x . What is the value of x ?

