

Activity Sheet;

Challenge Questions

1. 1105

The sum of the squares of two consecutive numbers is 1105. What are the two numbers?

2. Coaches

A coach operator, not having room in his garage for eight of his coaches, increased the size of the garage by 50%, and then had room for eight more coaches than the number he owned. How many coaches did he own?

3. Narcissistic Numbers

Calculate: $1^3 + 5^3 + 3^3$. What is special about this number? Find at least two other similar 3-digit numbers. (One at least of them involves the digit 7.)

4. May and September

An old man married a young woman. Their combined ages amounted to 100. The man's age multiplied by 4 and divided by 9 gave the woman's age. What were their respective ages?

5. Pocket Money

A father divided a certain number of pounds among his four children. To the first he gave a part, to the second one third of what was then left after the first's share, to the third he gave five-eighths of what was then left, and to the fourth the balance, which equalled two-fifths of the first child's share. Each child received a whole number of pounds. No child received as much as £20. How much money did the father distribute, and how much did each child receive?

Activity Sheet;

Challenge Answers

1. 1105

23 and 24

2. Coaches

40 Coaches

3. Narcissistic Numbers

The given number is 153, equal to the sum of the cubes of its digits. Other numbers sharing this property are 370, 371 and 407.

4. May and September

69 years and 12 weeks and 30 years and 40 weeks

5. Pocket Money

The father distributed £39, the children receiving respectively £15, £8, £10 and £6.