Maths Week/Pāngarau Wiki 2025

Daily Dollar/Ko te Tāra o te Rā

Bill Ellwood Memorial Series

This series is a tribute to Bill Ellwood, who wrote much of the Maths Week material from 2006 to 2019. Bill passed away in June 2021.

Set D Day 3

For students

WHAT TO DO FOR STUDENTS

1 You may work on your own or with someone else, and your teacher or someone else can help you.

2 Answer the questions.

3 Each question has a dollar value. Each day's questions total $100 in value.

4 When you have answered the questions, your teacher will give you the answers.

5 If you are right, you will get the dollar value for each question. You then you can work out how many dollars you have earned for the day.

6 Add the number of dollars you have earned each day in the Daily Dollar questions and get a total for the week. Then you can compare your total for the week with others in your class.

7 Perhaps your teacher may award a prize for the highest total for the week!

8 Good luck!

FRAMING RECTANGLES

Question 1 ($20)

Using square paper, or 24 square tiles of the same colour (if these are available in our classroom), create a rectangle with exactly 24 square tiles and calculate its perimeter in squares.

Question 2 ($20)

Create as many additional different rectangles as possible using exactly twenty-four squares.

Record your answers on squared paper and record the perimeter of each different rectangle. Remember to use a ruler for the lines.

What do you notice about your results?

Question 3 ($20)

Re-draw your rectangles from question two with a border of squares around the outside.

Record how many squares are in the rectangle (its area) and how many are in the border for each diagram in a table. What do you notice about the results?

Question 4 ($20)

What number(s) between 1 and 50 would have the most unique rectangles that have that number as an area?

What are the rectangles this/these number/s of square tiles produce/s?

Record some results in a table and write an explanation to explain why your answer is correct.

Question 5 ($20)

Write a word explanation to explain how you calculate the number of square tiles in the border for a rectangle of any width and length. Try to make your explanation as simple as possible.

Translate your word explanation into an algebraic expression to find the number of squares in the border for any rectangle of length (l) and width (w).

If you cannot write an explanation, try drawing some more example rectangles with different numbers of square tiles and recording your results in a table.