

Looking Ahead

Problem One

The decimal for $\frac{1}{3}$ is 0.33333333, so the digit in the fiftieth decimal place will be a 3.

What digit will be in the fiftieth place in the decimal for $\frac{1}{7}$?

Problem Two

Wandering Wiha is going to cross a desert that is 100 kilometres wide. She can carry only enough food and water to last her up to 4 days in the hot sun.

Each day, she can walk 20 kilometres, so she will need to leave hidden stores of food and water to pick up along the way.

How many days will it take her to cross the desert?



Problem Three

With the coins in my pocket, I can pay the exact amount for any cash purchase up to \$2.00 (that is, purchases of 10 cents, 20 cents, 30 cents, 40 cents, ... \$2.00).

If I buy something that costs \$2.00, I will have no coins left.

What is the minimum number of coins in my pocket?

Problem Four

- a. How many diagonals does this hexagon have?



- b. How many diagonals does an octagon have?
 c. Can you find a rule for working out how many diagonals different polygons have?