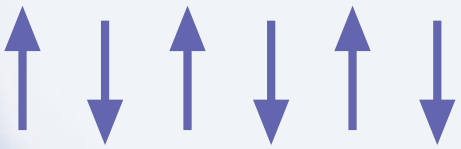
Arrow Antics

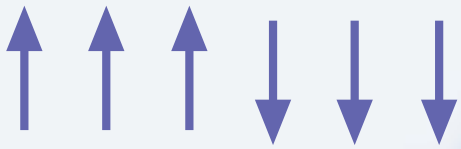
Problem One

Change the arrows in Picture One so that they match the arrows in Picture Two. You can only do this by swapping two arrows that are next to each other.

Picture One



Picture Two



What is the least number of swaps it will take?

Problem Two

The first 10 multiples of nine are:

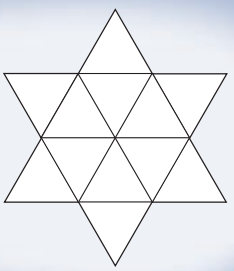
9 18 27 36 45 54 63 72 81 90

a. Add the digits of each of these multiples. What do you notice?

b. Try adding the digits of each of the first 10 multiples of eight until you get a single-digit number. What pattern do you notice this time?

c. Do the same with the multiples of seven.

Problem Three



a. How many parallelograms can you find in this star shape?

b. How many trapezia can you find in this star shape?

Problem Four

How many blue bags balance one spotty bag?