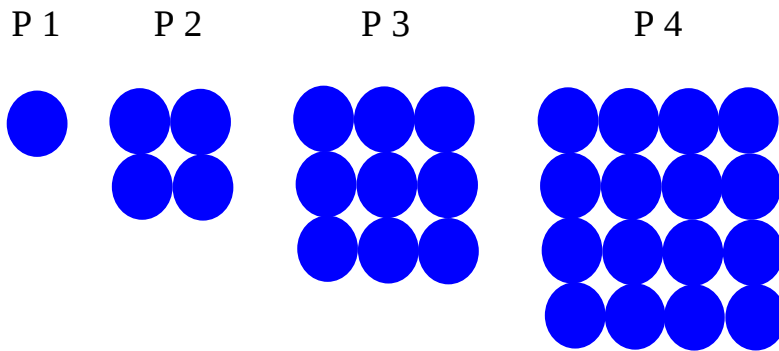


Exercise 2018-8EB-00006(4)

(1) Consider the following patterns:



- (a) Write down a sequence which represents the number of circles in each pattern.
- (b) Write the sequence in (a) in words.
- (c) Write a general rule for the sequence in (a).
- (d) How many circles will there be in pattern 8?
- (e) Which pattern will consist of 121 circles?

(2) Consider the following sequence and answer the questions: $\frac{2}{7}$; $\frac{5}{3}$; $\frac{8}{-1}$; $\frac{11}{-5}$;

- (a) Write down the 5th and 6th terms.
- (b) Write an algebraic rule to describe the pattern sequence.
Hint: The numerator and denominator have different rules.
- (c) Calculate the 25th term.
- (d) For which term in the sequence will the numerator be equal to 89?