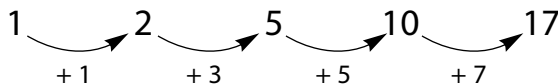


Number Patterns and Pattern Rules



Quick Review

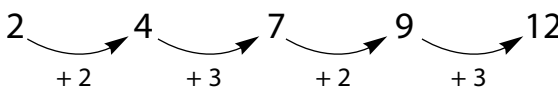
➤ Here is a number pattern:



A pattern rule is:

Start at 1. Add 1. Increase the number you add by 2 each time.

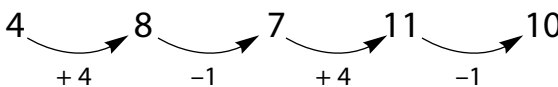
➤ Here is another number pattern:



A pattern rule is:

Start at 2. Alternately add 2, then add 3.

➤ Here is another number pattern:



A pattern rule is:

Start at 4. Alternately add 4, then subtract 1.

Try These

1. Write the next 5 terms in each pattern.

a) 25, 29, 30, 34, 35, _____, _____, _____, _____, _____

b) 3, 4, 6, 9, 13, _____, _____, _____, _____, _____

c) 16, 19, 17, 20, 18, _____, _____, _____, _____, _____

2. Write the first 4 terms of each pattern.

a) Start at 6. Add 7 each time.

_____, _____, _____, _____

b) Start at 2. Alternately add 6, then subtract 2.

_____, _____, _____, _____

Practice

Use a calculator when it helps.

1. Write the next 4 terms in each pattern. Write each pattern rule.

a) 100, 125, 120, 145, 140, _____, _____, _____, _____

Pattern rule: _____

b) 85, 81, 90, 86, 95, _____, _____, _____, _____

Pattern rule: _____

c) 36, 72, 144, 288, 576, _____, _____, _____, _____

Pattern rule: _____

2. Write the 6th term of each pattern.

a) Start at 500. Alternately add 50, then subtract 15. _____

b) Start at 85. Add 7. Increase the number you add by 3 each time. _____

c) Start at 763. Subtract 13 each time. _____

d) Start at 97. Alternately subtract 9, then add 2. _____

3. Start at 999. Write the first 7 terms of a pattern.

Write the pattern rule.

Pattern: _____

Pattern rule: _____

Stretch Your Thinking

Write the first 5 terms of as many different patterns as you can that start with the terms 19, 24, ...

Using Patterns to Solve Problems



Quick Review

One box holds 15 books.

- How many books will 2 boxes hold? 3 boxes? 4 boxes?

Make a table.

Two boxes hold 30 books.

Three boxes hold 45 books.

Four boxes hold 60 books.

- Predict how many books 10 boxes will hold.

Number of Boxes	Number of Books
1	15
2	30
3	45
4	60

⤴ A pattern rule is:
Multiply the number of boxes by 15.

To predict the number of books 10 boxes will hold, multiply:

$10 \times 15 = 150$ Ten boxes will hold 150 books.

Try These

- One concert ticket costs \$11.
 - Complete the table to find the cost of 7 tickets.
 - Write a pattern rule for the cost.

 - Predict the cost of 10 tickets. _____
 - Extend the pattern. How many tickets can you buy with \$155? _____

Number of Tickets	Cost (\$)
1	
2	
3	
4	

Practice

1. Ivo practises the guitar 25 minutes every day.
 - a) Make a table to show how many minutes Ivo practises in one week.

 - b) How many minutes does Ivo practise in 10 days?

 - c) How many minutes will Ivo practise in November?

How many hours is that?

 - d) How many days will it take Ivo to practise a total of 15 hours? _____

2. One minibus holds 18 students.
 - a) Make a table to show how many students can ride in 6 minibuses.

 - b) Write a pattern rule for the number of students.

 - c) How many students can ride in 10 minibuses?

Stretch Your Thinking

Think about the minibuses in question 2 above.

- a) How many students can ride in 25 minibuses? _____
- b) How many minibuses are needed for 170 students? _____