# Year 6 maths: Number patterns with big numbers, decimals and two-step rules (Medium)

Maths · Patterns and algebra
Level: Medium

Student: _____ Date: _____

**Instructions**
- There are 10 questions. Read each one carefully.
- Write your answers on this paper. Use the space under a question to work it out.
- A grown-up can read a question aloud — that's fine.
- The answers are at the end. Check them together when you have finished.

## Questions

**1.** Count back in 20s: 300 040, 300 020, 300 000, ___. What comes next? Answer: ☐

Working:

**2.** Fill the gap: 8 640, ___, 9 240, 9 540. Answer: ☐

Working:

**3.** The pattern is 6, ___, ___, ___, ___, 26 and the gaps are equal. What is the first missing number?

Circle one answer.

○ **A** 11 ○ **B** 9 ○ **C** 10 ○ **D** 14

**4.** Tiles make a pattern. Step 1 uses 4 tiles, Step 2 uses 7 and Step 3 uses 10. How many tiles does Step 6 use?

Circle one answer.

○ **A** 18 ○ **B** 16 ○ **C** 19 ○ **D** 24

**5.** A tank holds 99 750 L and gains 125 L each hour. How many litres after 3 hours?

Answer: ____ L

Working:

**6.** Fill the gap: 1 000, 1 750, 2 500, ___, 4 000.

Answer: ____

Working:

**7.** A tank holds 10 000 L. 825 L is taken out each day. How many litres are left after 6 days?

Answer: ____ L

Working:

**8.** A pattern goes up by the same amount each time. The 1st term is 14 and the 5th term is 62. What is the 3rd term?

Answer: ____

Working:

**9.** Matchstick houses: 1 house needs 6 sticks, 2 joined houses need 11, 3 need 16. How many sticks do 10 joined houses need?

Circle one answer.

○ **A** 51 ○ **B** 50 ○ **C** 60 ○ **D** 56

**10.** Which number is in the pattern 17, 29, 41, 53, ...?

Circle one answer.

○ **A** 253 ○ **B** 251 ○ **C** 245 ○ **D** 247

# Answer key

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**1.** 299 980

300 000 − 20 = 299 980.

**2.** 8940

The rule is add 300. 8 640 + 300 = 8 940.

**3.** C — 10

There are 5 gaps from 6 to 26. 20 ÷ 5 = 4, so 6 + 4 = 10.

**4.** C — 19

Each step adds 3. Step 4 is 13, Step 5 is 16, Step 6 is 19.

**5.** 100 125 L

125 × 3 = 375. 99 750 + 375 = 100 125.

**6.** 3250

The rule is add 750. 2 500 + 750 = 3 250.

**7.** 5050 L

6 × 825 = 4 950. 10 000 − 4 950 = 5 050.

**8.** 38

4 steps from 14 to 62 is 48, so each step is 12. The 3rd term is 14 + 24 = 38.

**9.** A — 51

Each extra house adds 5 sticks. 10 houses need 6 + 9 × 5 = 51 sticks.

**10.** C — 245

The terms are 5 more than a multiple of 12. 245 − 5 = 240 = 12 × 20.