

Algebra & Sequences: Medium Practice Paper

Q1. A number machine adds 5 to every input and then doubles the result. What comes out when 12 goes in?

- A. 17 B. 22 C. 29 D. 34 E. 39

Q2. The table shows how much Ravi has saved after each week. If the pattern carries on, in which week will his savings first be more than £40?

Week	1	2	3	4
Savings (£)	7	11	15	19

- A. Week 9 B. Week 10 C. Week 11 D. Week 12 E. Week 13

Q3. Which of these expressions has the same value as $3(2x - 5)$?

- A. $6x - 15$ B. $6x - 5$ C. $5x - 15$ D. $6x + 15$ E. $2x - 15$

Q4. What is the next number in this sequence?

0.8, 0.4, 0.2, 0.1, ?

- A. 0 B. 0.005 C. 0.02 D. 0.05 E. 0.5

Q5. The n th term of a sequence is $8n - 3$. Which of these numbers is a term in the sequence?

- A. 40 B. 53 C. 60 D. 72 E. 84

Q6. A plumber charges £40 for coming out plus £25 for each hour worked. One job costs £140 altogether. How many hours did the plumber work?

- A. 3 B. 4 C. 5 D. 6 E. 7

Q7. A sequence goes up by the same amount each time. Its 1st term is 8 and its 9th term is 40. By how much does it go up each time?

- A. 3 B. 4 C. 4.5 D. 5 E. 8

Q8. Which of these equations is solved by $x = 7$?

- A. $3x - 4 = 17$
B. $2x + 5 = 21$
C. $4x = 21$
D. $x + 9 = 15$
E. $5x - 3 = 27$

Q9. Solve for y .

$$2y + 3y - 4 = 26$$

- A. 4 B. 5 C. 6 D. 7 E. 10

Q10. What is the next number in this sequence?

1, 8, 27, 64, ?

- A. 81 B. 100 C. 121 D. 125 E. 128

Q11. Simplify this expression.

$$5(m + 2) + 3m$$

- A. $8m + 10$ B. $8m + 2$ C. $5m + 10$ D. $8m + 12$ E. $15m$

Q12. n is a whole number and $n + 8 > 20$. What is the smallest value n can be?

- A. 11 B. 12 C. 13 D. 14 E. 28

Q13. Some sweets are shared equally between 6 children so that each child gets s sweets, and 4 sweets are left over. Which expression gives the number of sweets there were at the start?

- A. $6s - 4$ B. $s + 10$ C. $6(s + 4)$ D. $4s + 6$ E. $6s + 4$

Q14. When $x = 5$, which of these expressions does NOT equal 20?

- A. $4x$ B. $x^2 - 5$ C. $3x + 5$ D. $2x + 11$ E. $30 - 2x$

Q15. The sequence 3, 8, 13, 18, ... carries on in the same way. Will 100 ever be a term in it?

- A. No, every term ends in 3 or 8
B. No, every term is odd
C. No, the sequence stops at 98
D. Yes, it is the 20th term
E. Yes, it is the 21st term