Algebra Play

Standard difficulty · 20 questions · 40 marks · Time: 33 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. Think of a number. Multiply it by 2, add 14, divide by 2, then subtract the number you thought of. The answer is always:

(a) 2 **(b)** 14 **(c)** your number **(d)** 7

2. 997 − 799 equals 99 times:

(a) 16 **(b)** 7 **(c)** 2 **(d)** 9

3. Think of a number, add 4, double it, subtract 8, and halve it. You get:

(a) 8 **(b)** double your number
(c) 4 **(d)** the number you thought of

4. 81 + 18 equals 11 times:

(a) 9 **(b)** 8 **(c)** 99 **(d)** 10

5. In a 2 × 2 square of dates on a calendar the top-left date is 7. The four dates add up to:

(a) 44 **(b)** 36 **(c)** 28 **(d)** 23

6. The pattern 14, 21, 28, 35, … has nth term:

(a) 7n + 14 **(b)** 7n + 7 **(c)** 8n + 7 **(d)** 6n + 7

7. Think of a number, multiply by 3, add 6, divide by 3, subtract your number. You always get:

(a) your number **(b)** 3 **(c)** 2 **(d)** 6

8. Someone multiplies a number by 5, adds 16, and gets 76. The number was:

(a) 60 **(b)** 13 **(c)** 12 **(d)** 11

Section B — Short answer — 8 × 2 = 16 marks

9. Think of a number n. Add 13, multiply by 5, subtract 65. Write the result in terms of n, and find it for n = 30.

10. Try the 1089 trick with 793: reverse it and subtract the smaller from the larger, then reverse the answer and add. What do you get?

11. In a 3 × 3 square of dates on a calendar the middle date is 17. Find the sum of each diagonal and explain why they are equal.

12. Find the rule for 7, 16, 25, 34, … and use it to find the 74th term.

13. A trick: think of a number, add 10, multiply by 9, subtract 90, divide by 9. Show with algebra that you get your number back, and check it for 28.

14. Use $(n + 1)^2 - n^2 = 2n + 1$ to find $145^2 - 144^2$ without squaring.

15. Zoya thinks of a number, multiplies by 5, adds 3, doubles the result and subtracts 6. The answer is 190. What was the number? Why does this always work?

16. Show that 88 + 88 is a multiple of 11 by writing the numbers as 10a + b and 10b + a.

Section C — Word problems — 4 × 4 = 16 marks

17. Ananya says: "Think of a number, double it, add 4, halve it, and take away the number you first thought of. I know your answer!" What is the answer, and why?

18. Multiply an age of 83 by 7, and then multiply the result by 1443. What do you get, and why does the age appear three times?

19. Meera picks a 2 × 2 square of dates on a calendar and says the four dates add up to 48. Find the four dates.

20. Figure 1 of a tile pattern has 8 tiles, figure 2 has 10 and figure 3 has 12. Write a rule for figure n and find how many tiles figure 48 has.

Want another sheet on this chapter? In the Ambiful Worksheets app every sheet is new, with its answer key, and your child never gets the same question twice.
Scan the code to get the free app, or open **worksheets.ambiful.com/get**

Answer key

Algebra Play · AW-8M-ALP-2026-V1 · For parents — fold back or tear off before handing the sheet to your child.

Q	Answer	Working
1	**(d) 7**	(2n + 14) ÷ 2 − n = 7
2	**(c) 2**	198 = 99 × 2
3	**(d) the number you thought of**	(2(n + 4) − 8) ÷ 2 = n
4	**(a) 9**	99 = 11 × 9
5	**(a) 44**	7 + 8 + 14 + 15
6	**(b) 7n + 7**	it goes up by 7 each time: 7n + 7
7	**(c) 2**	(3n + 6) ÷ 3 − n = 2
8	**(c) 12**	(76 − 16) ÷ 5 = 12
9	**5n; 150**	5(n + 13) − 65 = 5n
10	**1089**	793 − 397 = 396; 396 + 693 = 1089
11	**51 each**	(m − 8) + m + (m + 8) = 3m and (m − 6) + m + (m + 6) = 3m
12	**9n − 2; 664**	9 × 74 − 2
13	**n; 28**	(9(n + 10) − 90) ÷ 9 = n
14	**289**	2 × 144 + 1
15	**19; the result is always 10 times the number**	2(5n + 3) − 6 = 10n
16	**176 = 11 × 16**	(10a + b) + (10b + a) = 11(a + b)
17	**2, whatever the number**	(2n + 4) ÷ 2 − n = 2
18	**838383**	7 × 1443 = 10101, and 83 × 10101 = 838383
19	**8, 9, 15, 16**	4d + 16 = 48, so d = 8
20	**2n + 6; 102 tiles**	2 more each time; 2 × 48 + 6

Ambiful Worksheets · worksheets.ambiful.com · Not affiliated with CBSE / NCERT