Year 4 · Algebra: Balancing Number Sentences and Growing Patterns

Name: _____ Date: _____

Hi there! This sheet helps you practise checking if number sentences are true, filling in the missing numbers, and spotting how patterns grow. Take your time and show your working!

Warm-up

1. True or false? 6 × 4 = 24

2. Fill in the box: 30 + ☐ = 50

3. True or false? 15 − 8 = 6

4. Continue this pattern: 4, 8, 12, 16, ☐

Practice

5. True or false? 9 × 7 = 63

6. Fill in the box: ☐ ÷ 5 = 8

7. Fill in the box to keep the balance: 350 − ☐ = 200

8. Describe this growing pattern and write the next two numbers: 3, 6, 12, 24, ☐, ☐

9. Mele is saving koha for a school trip. She starts with $5 and adds $3 each week. How much has she saved after week 1, week 2, week 3 and week 4?

10. At the Avondale market, apples come in bags of 6. Sione buys 4 bags. Write a multiplication sentence and work out how many apples he has.

Challenge

11. Find the missing number that keeps both sides equal: 7 × 6 = ☐ + 12

12. A pattern starts at 2 and each number is double the one before: 2, 4, 8, 16, … What is the 6th number in the pattern?

Answer key (for parents and tutors)

1. True or false? 6 × 4 = 24
   True. 6 × 4 = 24, so the number sentence is correct.
2. Fill in the box: 30 + ☐ = 50
   ☐ = 20. We need 30 plus something to make 50. 50 − 30 = 20, so ☐ = 20.
3. True or false? 15 − 8 = 6
   False. 15 − 8 = 7, not 6, so the number sentence is false.
4. Continue this pattern: 4, 8, 12, 16, ☐
   ☐ = 20. The pattern grows by adding 4 each time: 16 + 4 = 20.
5. True or false? 9 × 7 = 63
   True. 9 × 7 = 63, so the number sentence is correct.
6. Fill in the box: ☐ ÷ 5 = 8
   ☐ = 40. If a number divided by 5 gives 8, then the number is 8 × 5 = 40. Check: 40 ÷ 5 = 8. ✓
7. Fill in the box to keep the balance: 350 − ☐ = 200
   ☐ = 150. To go from 350 down to 200 we subtract 150. Check: 350 − 150 = 200. ✓
8. Describe this growing pattern and write the next two numbers: 3, 6, 12, 24, ☐, ☐
   The pattern doubles each time (multiply by 2). 24 × 2 = 48, and 48 × 2 = 96. The next two numbers are 48 and 96.
9. Mele is saving koha for a school trip. She starts with $5 and adds $3 each week. How much has she saved after week 1, week 2, week 3 and week 4?
   Week 1: $5. Week 2: $5 + $3 = $8. Week 3: $8 + $3 = $11. Week 4: $11 + $3 = $14. After four weeks Mele has saved $14.
10. At the Avondale market, apples come in bags of 6. Sione buys 4 bags. Write a multiplication sentence and work out how many apples he has.
    The number sentence is 6 × 4 = ☐. 6 × 4 = 24, so Sione has 24 apples.
11. Find the missing number that keeps both sides equal: 7 × 6 = ☐ + 12
    First work out the left side: 7 × 6 = 42. So we need ☐ + 12 = 42. To find ☐, subtract 12 from 42: 42 − 12 = 30. So ☐ = 30. Check: 30 + 12 = 42, and 7 × 6 = 42, so both sides balance. ✓
12. A pattern starts at 2 and each number is double the one before: 2, 4, 8, 16, ... What is the 6th number in the pattern?
    Each term doubles (× 2). 1st: 2, 2nd: 4, 3rd: 8, 4th: 16, 5th: 16 × 2 = 32, 6th: 32 × 2 = 64. The 6th number is 64.