Worksheet: Algebra Play

IGCSE · Class 8 · Mathematics · 8 questions · 14 marks

Name: _____	Date: _____	Score: _____ / 14

Q1. A two-digit number is reversed and the smaller is subtracted from the larger. The result is always divisible by: *[1 mark]*

A) 7

B) 11

C) 3 but not 9

D) 9

Q2. In a number pyramid each box is the sum of the two below it. If the bottom row is a, b, c, the number at the top is: *[1 mark]*

A) 3(a + b + c)

B) 2a + b + 2c

C) a + b + c

D) a + 2b + c

Q3. Using each of the digits 3, 5 and 9 exactly once in (two-digit number) × (one-digit number), the largest possible product is: *[1 mark]*

A) 285

B) 465

C) 315

D) 477

Q4. A 6-digit number of the form abcabc is always divisible by: *[1 mark]*

A) 11 and 37

B) 7, 11 and 13

C) 3, 7 and 9

D) 9 and 11 only

Q5. The four numbers of a 2 × 2 block on a calendar page add up to 36. What is the top-left number? *[1 mark]*

A) 6

B) 4

C) 9

D) 5

Q6. Take any 3-digit number abc and form bca and cab by cycling the digits. Prove that abc + bca + cab is always divisible by 37, and say whether it is always divisible by 3. *[3 marks]*

Q7. A farm has horses and hens with 55 heads and 150 legs in total. Find the number of each, first with algebra and then without using letters. *[3 marks]*

Q8. A dosa cart costs ₹5000 a day in rent and ₹10 to make each dosa. If customers will pay only ₹50 a dosa, how many must be sold daily to make a profit of ₹2000? *[3 marks]*