Balance-Scale Algebra: Solving for Unknown Weights

Worked example / complete source key

A balance scale is level. The left side has three identical circles and a 4-gram block. The right side has a 19-gram block. Find the weight of one circle.

Answer: One circle weighs 5 grams.

Reason: Let c be the weight of one circle in grams. The left side weighs 3c + 4 grams and the right side weighs 19 grams. Since the scale is level, 3c + 4 = 19. Subtract 4 from both sides: 3c = 15. Divide by 3: c = 5. Check: three circles weigh 15 grams, plus 4 grams gives 19 grams, matching the right side.