# S1 Mathematics Practice Paper: Directed Numbers and the Number Line, Algebraic Expressions and Substitution, Simple Linear Equations, Percentages and Discount, Perimeter and Area, Bar Charts and Averages

S1 | Mathematics | Time: 75 minutes | Total: 100 marks | 24 questions

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## Part 1: Directed Numbers and the Number Line

**Evaluate the following. Show your steps.**

**1. Evaluate (-7) + 12 - (-5).** [4]

**2. Evaluate (-3) x (-4) / (-6).** [4]

**3. On a number line, point A is at -6 and point B is at 9. Find the length of AB.** [4]

**4. The temperature falls 7 degrees Celsius from -4 degrees Celsius, then rises 3 degrees. Find the final temperature.** [4]

## Part 2: Algebraic Expressions and Substitution

**Simplify or substitute. Show intermediate steps.**

**5. Simplify 3a + 5b - a + 2b.** [4]

**6. Expand 4(2x - 3) and find its value when x = 5.** [4]

**7. Given y = 3n^2 - 5, find y when n = -2.** [4]

**8. A rectangle has length (2x + 3) cm and width (x - 1) cm. Find its perimeter, and the perimeter when x = 4.** [4]

## Part 3: Simple Linear Equations

**Solve the following equations. Show steps and a check.**

**9. Solve x + 9 = 4.** [4]

**10. Solve 4x - 7 = 17.** [4]

**11. Solve x / 3 + 2 = 8.** [4]

**12. The sum of three consecutive integers is 63. Find the three integers.** [4]

## Part 4: Percentages and Discount

**Show your working and include units in the answers.**

**13. An item marked at 320 dollars is sold at a 20 percent discount. Find the selling price.** [4]

**14. An item costing 250 dollars is marked up by 12 percent. Find the new price.** [4]

**15. An item is sold for 420 dollars at a profit of 20 percent of cost. Find the cost.** [4]

**16. A test has 60 questions and Ming answers 45 correctly. Find the percentage correct.** [4]

## Part 5: Perimeter and Area

**Take pi as 3.14 and state the formula used.**

**17. A square has perimeter 36 cm. Find its side length and area.** [5]

**18. A rectangle is 12 cm long and 7 cm wide. Find its area and perimeter.** [5]

**19. A triangle has base 14 cm and height 9 cm. Find its area.** [5]

**20. A circle has radius 5 cm. Find its circumference and area.** [5]

## Part 6: Bar Charts and Averages

**Show your working and name the statistic you use.**

**21. For the data 6, 8, 8, 10, 13, find the mean, median and mode.** [4]

**22. A bar chart shows class sizes 24, 30, 18 and 28. Find the total and the percentage in the largest class.** [4]

**23. Five test scores are 72, 78, 80, 85 and 90. Find the mean and the range.** [4]

**24. In a class of 40, 16 students like football. Find the percentage and the sector angle in a pie chart.** [4]