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Laurier Grade 9 Pre-IB Admission Test Guidelines

MATHEMATICS

The time limit is 30 minutes

The Math component of the test will be based on the Ontario Grades 7 curriculum and some basic concepts from the Ontario Grade 8 curriculum. Note that an emphasis will be placed on operations with fractions.

In order to prepare for the test, applicants are recommended to practice solving problems on the following Ontario curriculum expectations.

Number Sense and Numeration

- Represent, compare and order rational numbers (i.e. positive and negative fractions and decimals to thousands)
- Translate between equivalent form of a number (i.e. decimals, fractions, percents) (e.g., $\frac{3}{4}$ = 0.75);
- Determine common factors and common multiples using the prime factorization (e.g., 12 = 2 x2 x3; GCF of 12 and 18 = 6; LCM of 12 and 18 = 36);
- Solve problems involving percent;
- Add, subtract, multiply and divide simple fractions;
- Reduce fractions to lowest terms;
- Translate between improper fractions and mixed numbers;
- Evaluate expressions that involve integers using order of operations;
- Solve problems involving proportions (Sample problem: The ration of stone to sand in HardFast Concrete is 2 to 3. How much stone is needed if 15 bags of sand are used?)
- Calculate the mean and the median of a set of numbers.

Geometry and Spatial Sense

- Solve angle-relationship problems involving right triangles and intersecting lines;
- Solve problems involving relationships among area, perimeter and side lengths of a rectangle;

Patterning and Algebra

- Determine a term, given its term number, in a linear pattern represented by an algebraic expression (Sample problem: Given the algebraic equation, t = 2n – 1, find the 100^{th} term.).
- Translate statements describing mathematical relationships into algebraic expressions (e.g. "a number tripled and decreased by 7" translates into 3n – 7).
- Solve linear equations with one variable (e.g., Solve this equation: $x + \frac{3}{7} = \frac{5}{7}$).

Theory of Probability

- Calculate probability of simple events (Sample Problem: Daniel has three T-shirts one in each colour: red, blue and yellow. He has two hats – one is red and one is blue. He has two pairs of shorts: one is red and the other one is yellow. If Daniel chooses his clothes randomly, what is the probability that he'll be wearing the red T-shirt, red hat and red pair of shorts?)