

Please try to solve the questions on your own and then Review the topics you do not remember.

Math 6 Practice Test

Student name: _____

1. How many ways are there to choose a president, a vice-president, and a treasurer from a group of 5 people?
2. In an isosceles triangle, the base is 6 cm long and sides are 5cm long. Find the area of the triangle.
3. Is the following statement true? If yes, prove by giving a truth table; if no, provide a counterexample and explain why it is not true.
NOT(A AND B) is the same as (NOT A) AND (NOT B)
4. In a class of 35 students, 17 students like math, 20 students like physics, and 10 don't like any science. How many students like both mathematics and physics?
5. You draw three cards from the standard deck of 52 cards.
 - a. What are the chances that you will get no hearts?
 - b. What are the chances that you will get exactly one heart?
6. Draw the graphs of the following functions:
 - a. $y = \frac{x}{2} + 1$
 - b. $y = |x - 1|$
 - c. Based on the graphs above, solve the equation $\frac{x}{2} + 1 = |x - 1|$
7. In an arithmetic sequence $a_{10} = a_1 + 27$ and $a_2 = 7$. Find the sum of the first 6 members of this sequence.
8. Compute: $\frac{1}{2} + \frac{1}{2^2} + \frac{1}{2^3} + \dots + \frac{1}{2^9}$

Useful formulas:

Example Truth table for operation OR

A	B	A OR B
T	T	T
T	F	T
F	T	T
F	F	F

Arithmetic sequence: $a_n = a_1 + (n - 1)d$, $S_n = \frac{(a_1 + a_n)n}{2}$

Geometric sequence: $b_n = b_1 \times q^{n-1}$, $S_n = \frac{b_1(1-q^n)}{1-q}$