

SCHOOLNOVA 2022: PLACEMENT TEST FOR MATH 8

Name: _____

1. Expand as sums of powers of x :

$$(4 - 5x)(3x - 4)^2$$

2. Calculate ${}_7C_4$. [Alternative notation for this is $\binom{7}{4}$]

3. Out of a group of 30 students, 20 girls and 10 boys, the coach wants to choose a team of 4 girls and 2 boys (in no particular order) to participate in a competition. How many ways are there to do it? You don't need to provide a numeric answer; a proper formula will suffice.

4. Find the discriminant and solve the following quadratic equation:

$$3x^2 - 4x - 10 = 0$$

5. Solve the following inequality. Write your answer as a set of possible values for x .

$$(x + 3)(3x - 2) \geq 0$$

6. Which of the following numbers is the largest: $\sin 30^\circ \times \cos 30^\circ$, $\sin 45^\circ \times \cos 45^\circ$, $\sin 60^\circ \times \cos 60^\circ$?