SCHOOLNOVA 2022: PLACEMENT TEST FOR MATH 7

Name: _____

1. Solve the following equation:
$$6x^2 - (2x + 3)(3x - 10) - 3(2x + 5) = 0$$

2. Solve the equation
$$|7x + 1| = 22$$

3. Imagine that from the regular card deck of 52 cards (4 suits, 13 cards per suit) you randomly choose 5 cards. What is the probability that all five cards are picture cards (*Jack*, *Queen*, or *King*)?

4. Simplify the following expression
$$\frac{(a^3 b)^3 \cdot a^4 b^2}{(ab^3)^2}$$

5. Draw the graph of the following function:
$$y = 2\,|x - 3| + 2$$

6. Explain how to draw a bisector of a given angle using only a straightedge (ruler without marks) and a compass. Note that you cannot measure the angle using protractor!