Warm-Up 4
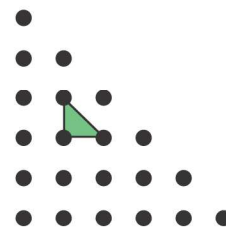
61._____ Amy is picking her outfit for the day. She has a red, blue and black version each of her headband, sweater and skirt. If she selects each item at random, what is the probability that at least 2 pieces are the same color? Express your answer as a common fraction.

62._____ What is the units digit of $2026^{2025} + 2025^{2026}$?

63._____ ft³ A cube has surface area, in square feet, equal to the total length of its edges, in feet. What is the volume of the cube, in cubic feet?

64._____ Professor Plum teaches a class of 30 students. He accidentally left out Scarlet's score of 100 when first calculating the class average on the final exam. After including her score, the average increased by 1 point. What is the correct class average with Scarlet's score included?

65._____ A game called MATHS is played on a diagram with 5 squares. A counter starts on square T, and a coin is tossed. If the coin lands heads up, the counter moves 1 square to the right; if it lands tails up, the counter moves 1 square to the left. What is the probability that after 2 tosses, the counter returns to square T? Express your answer as a common fraction.

$$\boxed{M}\ \boxed{A}\ \boxed{T}\ \boxed{H}\ \boxed{S}$$

66._____ What is the least integer $n > 1$ for which $n!$ is divisible by n^2?

67._____ minutes Micah's flight was originally scheduled to depart Portland at 2:40 p.m. and arrive in San Francisco at 4:10 p.m. However, due to weather delays, the plane didn't depart Portland until 3:15 p.m. His connecting flight in San Francisco is scheduled to depart at 5:05 p.m. Assume the flight will take the expected amount of time and that the connecting flight departs on time. How many minutes after his plane lands in San Francisco will his connecting flight depart?

68._____ triangles The points in the triangular array shown right are 1 unit apart both horizontally and vertically. How many isosceles right triangles, with legs of length 1 unit, can be drawn by connecting 3 points in the array?

69._____ If $2a + b = 13$, what is the value of $6a + 3b$?

70._____ Beginning with the number 100, Arlo begins counting down by 7s until he reaches a non-positive number. He then begins counting up by 6s until he reaches a number that is at least 100. What is the last number that Arlo counts?