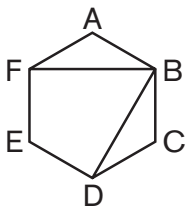
Warm-Up 4

61. _____ Diagonals FB and BD are drawn in regular hexagon ABCDEF. What is the ratio of the sum of the areas of triangles ABF and BCD to the area of quadrilateral BDEF? Express your answer as a common fraction.



62. _____ What is the value of $\frac{11!-(9+1)(9!)}{8(7!)}$?

63. _____ times David's optometrist sold him a bottle of eyeglass cleaner containing 30 mL of glass-cleaning solution. Assuming there are 20 drops per milliliter, and assuming proper cleaning requires 3 drops of glass cleaner on each side of each lens, what is the maximum number of times David can properly clean his glasses before he must buy a new bottle of eyeglass cleaner?

64. _____ combinations The lunch-ordering app for Pete's Pizza Parlor requires you to choose two distinct meats from among pepperoni, Canadian bacon and sausage; or choose two distinct vegetables from among mushrooms, onions, green peppers and black olives; or choose one meat and one vegetable from among the same choices. How many different pizza combinations are possible using the lunch-ordering app?

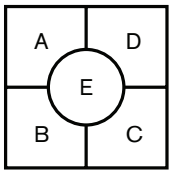
65. _____ pounds Kathy Beckhardt weighs four of her sheep at the fair. She can weigh two of them at a time on the big scale. Sheep A and sheep B have an average weight of 150 pounds, sheep B and sheep C have an average weight of 127 pounds, and sheep C and sheep D have an average weight of 168 pounds. What is the average weight of sheep A and sheep D?

66. _____ meters In circle O, the lengths of chords AB and BC are equal and $m\angle ABC = 90$ degrees. Given that circle O has a radius of 3 meters, what is the length of arc ABC? Express your answer in terms of π.

67. _____ tiles How many 4-inch square tiles are needed to cover a wall that measures 6 feet by 8 feet?

68. _____ What is the units digit of $2^{2017} \times 7^{2017}$?

69. _____ integers How many integers between 100 and 1000 contain no digits other than 3, 4 or 5?

70. _____ paths 

The square shown is divided into five cells. How many paths can be drawn that start at any cell, move only to adjacent cells and visit each of the five cells exactly once?