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Problem 2. Four red points and four blue points are located in the plane. How many ways can you draw four line segments, each starting at a red point and ending at a blue point, if you must use each point exactly once?

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Problem 3. Eight points are located in the plane. How many ways can you draw four line segments, each starting at one of the points and ending at another, if you must use each point exactly once?

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Problem 4. The faces of a rectangular box have areas 10, 14, and 35 sq ft, respectively. What is the volume of the box, in cu ft?

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Problem 5. The dresser drawer of a faithful UGA student contains 5 red socks and 3 black socks. He pulls out two socks at random (without replacement). What is the probability that the socks have the same color? Give your answer as a fraction in lowest terms.

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Problem 7. What is the smallest positive integer that is the hypotenuse of two distinct Pythagorean triangles? (That is, we want the smallest positive integer z so that $z^2 = x^2 + y^2$ for two different *pairs* of positive integers x and y.)

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Problem 10. A sphere of radius 1 is inscribed in a right circular cone with base radius 2. What is the height of the cone?

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