

Tiebreaks B

1. Suppose that two circles ω_1 and ω_2 intersect at points A and B . Given that the radius of ω_1 is 10, the radius of ω_2 is 6, and $AB = 8$, compute the distance between the centers of the circles.
2. Om has a 6-sided die with 1 face of 1, 2 faces of 2, and 3 faces of 3. He starts on square 1. He rolls the dice repeatedly, going forward by the number shown on the dice. Let $\frac{p}{q}$ be the probability he never lands on square 4, with p and q relatively prime. What is $p + q$?
3. What is the sum of the smallest 5 integers with exactly 6 factors?

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