Math Bowl Round 3

Problem 1: Who solved fermat's last theorem first?
Ans: Can accept either "fermat solved it first, but the margins were too small to fit his elegant proof" or Andrew Wiles

Problem 2: What is 10101 base 2 in base 10?
Ans: 21

Problem 3: What is the sum of the first 20 counting numbers?
Ans: 210

Problem 4: What is the volume of a sphere with diameter 4?
Ans: $\frac{32\pi}{3}$ **or** $\frac{32}{3}\pi$

Problem 5: What is the area of an equilateral triangle with side length 5?
Ans: $\frac{25\sqrt{3}}{4}$

Problem 6: What is the probability of flipping two consecutive heads on an unfair coin that lands on heads twice as often as tails?
Ans: 4/9

Problem 7: If the set A = {1, 2, 3, 5, 6} and B = {2, 4, 5, 8} what is the union of A and B?
Ans: {1, 2, 3, 4, 5, 6, 8}

Problem 8: what is the value of $e^{-i*\pi}$?
Ans: -1

Problem 9: What is the sum of $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \ldots + \frac{1}{2^n}$?
Ans: 2

Problem 10: Arthur has 12 knights seated at the round table including himself. If there are n! ways for them to be arranged, what is n^2 ?
Ans: 121

Tiebreaker 1: What is the intersection of 5x + 3y = 13 and y = x - 1?
Ans: (2,1)

Only use if no one gets the first tiebreaker
Tiebreaker 2: What term BEST describes 2 angles with 90º as the sum of their measurements?
Ans: "complementary"