

Math Bowl Round 1

Problem 1: What is $7!$ as an integer?

Ans: 5040

Problem 2: what is the area of a triangle with sides 5, 12, 13?

Ans: 30

Problem 3: What is the second derivative of $f(x) = \sin x$?

Ans: $-\sin x$

Problem 4: What is the sum of the first 10 odd numbers?

Ans: 100

Problem 5: What is the sum of the interior angles in a convex hexagon?

Ans: 720

Problem 6: What is one-half of 75% of 80?

Ans: 30

Problem 7: For a right triangle $\sin(A)$ is $\frac{3}{4}$, what is the value of $\tan(A)$?

Ans: $\frac{3}{4}$

Problem 8: For $y = x^2 - 2x + 8$, what is the value of x for which y is at a global minimum?

Ans: 1

Problem 9: What is 125 to the two-thirds power?

Ans: 25

Problem 10: What is the period of the function $y = \cos(4x)$?

Ans: $\frac{\pi}{2}$

Tiebreaker 1: What is the sum of the roots of $y = x^2 - 19x + 20$

Ans: 19

Only use if no one gets the first tiebreaker

Tiebreaker 2: By what factor is the area of a hexagon increased, if a side-length is doubled?

Ans: 4