



Mental Math 7th/8th

Person 1

1	The denominator of a certain reduced fraction is double the numerator. What is this fraction?
2	If X is an integer and $X^2 + 2X$ is divisible by 2, what is the remainder when X is divided by 2?
3	If point x comma y is in the 3rd quadrant of the Cartesian Plane, in which quadrant will point x times y comma x plus y fall?
4	What is the slope of the line $3x + 2y = 6$?
5	Find the remainder when 5 to the power of 3 is divided by 6.

Person 2

1	Evaluate the number of sides in a pentagon times the number of positive integer factors of 13.
2	If February tenth in the year 2017 is a Friday, what day is March eleventh in the same year?
3	Evaluate: 202×198
4	What is the length of a space diagonal of a cube with side length 10?
5	Cathy is baking 5 identical, spherical chocolate cakes. If one cake has a surface area of 4π , what is the sum of the diameters of all five chocolate cakes?

Person 3

1	The length of a diagonal of a certain square is the square root of 2. What is its area?
2	What is the smallest prime number greater than 40?
3	What is the sum of the positive integer factors of 8?
4	Evaluate: $1 + 8 + 27 + 64 + 125$
5	What is the area of an equilateral triangle with side length 12?

Person 4

1	What is the sum of the number of vertices, edges, and faces of a tetrahedron?
2	How many diagonals does an octagon have?
3	What is the largest two-digit integer that is a multiple of 7?
4	What is the ratio of the volume of a sphere with radius of length 6 to the volume of a sphere with radius of length 2?
5	How many integers less than or equal to 90 have an odd number of positive factors?