2020 Castro Valley Junior Math Tournament
Mental Math Test Grades 6-8
Answer Key

#	Problems	Answers
1	What number is 64 more than half of 42?	85
2	How many faces does a cube have?	6
3	Round 5071.4285 to the nearest whole number.	5071
4	When my favorite number is increased by 71 and this result is multiplied by 3, the final result is 465. What is my favorite number?	84
5	Your closet contains 5 pairs of pants and 4 shirts. How many different outfits (pairings of shirts & pants) could you wear?	20
6	Evaluate: 9 + 8 x 8	73
7	What is the perimeter, in feet, of a regular octagon with sides measuring 4 ft?	32
8	Evaluate: $\frac{1}{3} + \frac{2}{7}$	$\frac{13}{21}$
9	What is the measure, in degrees, of an angle that is supplementary to a 75 degree angle?	105
10	If 3 Zithers are equivalent to 4 Yoyos, how many Zithers are equivalent to 24 Yoyos?	18
11	What is the median of the data set {5, 1, 9, 8, 5}?	5
12	Express 2704 in scientific notation.	2.704×10^3
13	What is the slope of a line perpendicular to the line 4x + 3y = -4?	.75 or $\frac{3}{4}$
14	A triangle has sides measuring 24 m, 44 m, and x m. What is the smallest possible integer value of x?	21
15	What is the diameter, in meters, of a circle with a circumference of 16π m?	16
16	What is the 7th term of the arithmetic (adding or subtracting) sequence whose first three terms are 7, 16, and 25?	61
17	Express $\sqrt{108}$ in simplest radical form.	$6\sqrt{3}$
18	What is the area, in meters, of a circle with a circumference of 8π m?	$16\square$
19	Alejandro and Noah see one another when they are 171 feet apart, and immediately begin running towards one another. If Alejandro can run at a speed of 6 feet per second, and Noah can run at a speed of 3 feet per second, how many seconds will it take them to reach each other?	19
20	What is the prime factorization, in exponential form, of 768?	$2^8 \times 3^1$