Sixth Grade Individual Test– Answer Keys

Note that parts of answers in parenthesis are **NOT** necessary for a correct answer. They are units, but if the wrong units are listed, then that makes the answer incorrect.

Individual Test #1

#1**:**   **D. 26.5**   5.3 x 3.5 = 18.55; 18.55/0.7 = 185.5/7 = 26.5.

#2:   **B. 260,000 cm³**   Volume is L x W x H; if each dimension is times 10 more then the new volume is 260 x 10 x 10 x 10 = 260 x 1,000 = 260,000.

#3:   **A. 51**   The sum of the numbers in the set divided by the number of items in the set = the mean; 357/7 = 51; a simpler method is to order the set from least to greatest and notice the pattern of adding 17 to each successive number, then the median for this set is also the mean.

#4:   **D. Alton**   Pie with the largest diameter is the largest; Martha's is 1 1/3 feet in diameter or 16 inches; Rachael's pie is the same with a radius of 8 inches; circumference = π x diameter, so for Alton's pie 54 = 3.1415 x diameter = 54/3.1415 = about 17 inches which is greater than the other two pies.

#5:   **B. 168**   3/8 = 63/X where X=mileage range with a fully charged battery; 3X = 504, X = 168.

#6:   **C. $\frac{27}{6}$ + (27 x $\frac{8}{5}$)**   The distributive property is illustrated here with 27 being multiplied to each term within the parenthesis and then adding those two terms.

#7:   **D. 37,015,056**   The hard way to calculate this is to find all 8 factors and multiply them together: (1 x 78) x (2 x 39) x (3 x 26) x (6 x 13) = 37,015,056; an easier way is to realize that if there are 8 factors, then there are 4 pairs of factors whose product is equal to 78; 78 x 78 x 78 x 78 = the answer; after multiplying 78 and 78 you quickly realize that no other choice available except D will be close to the correct answer.

#8:   **C. 1/5**   If the answer to the first question is A, a roll of a 1 or 2 out of 5 possible outcomes (since rolling a 6 simply means he will roll again until some answer choice is reached) will get him the correct answer 2/5 times. If the correct answer is B, C, or D, he will answer correctly only 1/5 of the time since only a roll of 3, 4, or 5 respectively would give him the correct answer.

#9:   **C. 6,885**   From 8:14 to 10: 08 is 1 hour and 54 minutes = 114 seconds; 114 x 60 = 6,840; add the extra 45 seconds, 6,840 + 45 = 6,885 seconds.

#10:   **B. 240 zm²**   Area of an isosceles trapezoid is (base1 + base 2)/2 x height; upper base is 15 + (2 x 5) = 25, since both legs are congruent; so (25 + 15)/2 x 12 = 40/2 x 12 = 20 x 12 = 240 zm².

#11:   **A. 200 feet**   20 new posts/4 sides is 5 new posts per side; since there are already posts on the corners, adding 5 to each side creates 6 spaces between posts on each side; 1,200/6 = 200 feet.

#12:   **B. $\frac{U}{2}$ + 3**   Only this expression correctly translates all shown examples of the U row entries into entries in the Ω row.

13:      **D. 72**   The fewest squares you can form with 18 squares would be 2 groups of 9 each; 3 people can sit on a side of each of the individual tables and there are 3 such tables per side per larger group; 3 x 3 x 4 (number of sides per square) x 2 (number of larger squares formed) = 72.

#14:   **B. (18,30)**   For every change of x-axis of 3, there is a change of 5 in the y-axis; only choice B

represents this line showing 18/3 = 6, 6 x 5 (change of y) = 30.

#15:   **C. 25%**   Lucky has 1/8 of the booty to begin with; 3 pirates lose 1/3 of their 1/8th share or 1/24 of the original booty; 3 x 1/24 = 3/24 or 1/8 of the booty won buy Lucky; add that 1/8 to what he already had, 1/8 + 1/8 = 2/8 or 1/4 which is 25%.