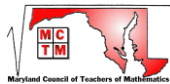




Maryland Math Month

April 2016 - High School



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>www.marylandmath.org</p> 					1 Find different cell phone plans and determine which would be the cheapest for your family, based on each family member's minutes of use.	2 How many integers between 100 and 1,000 are divisible by 7?
3 What are the first 12 terms of the Fibonacci sequence?	4 Think of seven jobs adults have in which they need to use math.	5 Solve $1/x = 0/x$.	6 The diagonal of one square is four times the length of another. How much larger is the area of the larger square?	7 The expression $\sqrt{1+2+3+4+x}$ has the value 4 when $x = 6$. What are all four integers x	8 An angle is three times as large as its supplement. Find the measure of the angle.	9 A ship reports that it is 20 miles East and 15 miles North of a lighthouse. How far is the ship from the lighthouse
10 Find the zeros of this cubic equation: $2x^3 + 7x^2 - 14x + 5$	11 Explore the connection between mean and median at onlinestatbook.com/stat_sim/des	12 The length of a rectangle is four times the width. The perimeter is 70 cm. Find the dimensions of the rectangle.	13 A 12 foot pole is upright. A stake is placed 9 feet from the base of the pole. How much rope is needed to brace the pole?	14 Plan a trip for you and your family - including travel (car or plane), lodging (hotel or with friends), ticket/admission prices, food, and extras for gifts.	15 An electric motor makes 3,000 revolutions per minute. How many degrees does it rotate in one second?	16 The Maryland population in 1990 was 4,781,468 and in 2000 was 5,296,486 (according to the U.S. Census). Determine a linear and an exponential model for Maryland's population [Note: use 1900 as $x = 0$].
17 MaryAnn needs to build a fence around a garden that is 25 feet by 45 feet. The posts are to be set 5 feet apart. How many posts will she need?	18 If the point $(-3,3)$ is rotated 90° counter clockwise about the origin, what are the new coordinates?	19 $A + B + C + D = 100$ and A, B, C, D are all nonnegative. What are the largest and smallest possible values of $ABCD$?	20 An ellipse has the equation $(x^2)/4 + (y^2)/9 = 1$. What are the lengths of its major and minor axes?	21 Are the following numbers a function? $\{(3,2), (6,-10), (2,3), (6,5), (4,9), (7,2)\}$	22 If $f(x) = x^2 + 3$, find $f(x+3)$. Justify your response.	23 Two sets of data have the same standard deviation, but the mean of the first set is double that of the second set. Find two sets of data that work for these constraints.
24 A student changes the Fibonacci sequence so that it doesn't start with the terms 1, 1. It now starts with the terms m, m . Each term is still obtained by adding the two previous terms. What is the tenth term?	25 The sum of an integer N and its reciprocal is equal to $78/15$. What is the value of N ?	26 The area of a rectangular field is equal to 300 square meters. Its perimeter is 70 meters. Find the length and width.	27 What is n th term in the following set of number: 3, 9, 19, 33, 51	28 Find two numbers whose sum is 26 and whose product is 165.	29 Each letter in the FRIDAY is put on a card and placed in a hat. A card is drawn and not replaced. A second card is drawn. What is the probability of drawing a "D" and a "Y"?	30 Research a famous mathematician. What was his/ her contributions to modern day mathematics?