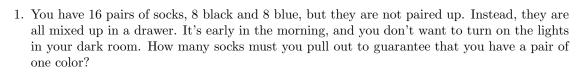
Math Field Day

Mad Hatter A sample questions

(taken from previous years)

Note: the problems given below are examples of problems given in previous years. They do not cover all the topics that can occur on the contest this year. They are only intended to give you a rough idea of the difficulty of the problems that may be given.



- (a) 2
- (b) 3
- (c) 4
- (d) 5
- (e) None of the above
- 2. If $5^{3 \log_5 x} = 64$ then
 - (a) x = 15
 - (b) x = 125
 - (c) $x = \frac{64}{3}$
 - (d) x = 4
 - (e) None of the above
- 3. If the diagonals of a rhombus are 6 and 8, then the side of the rhombus is:
 - (a) 3
 - (b) 4
 - (c) 5
 - (d) 6
 - (e) None of the above
- 4. At a sandwich shop there are 2 kinds of bread, 5 kinds of cold cuts, 3 kinds of cheese, and 2 kinds of dressing. How many different sandwiches can be prepared using one kind of bread, cold cuts, cheese, and dressing?
 - (a) 12
 - (b) 50
 - (c) 42
 - (d) 30
 - (e) None of the above
- 5. Solve: |2x + 5| > 9
 - (a) -7 < x < 2
 - (b) x > 2
 - (c) x > 2 or x < -2
 - (d) x > 2 or x < -7
 - (e) None of the above

6. Wh	at is the probability of flipping a penny three times and seeing at least one head?
(a)	25
(b)	50
(c)	75
(d)	87.5
(e)	None of the above
	en that the statement "all Glock numbers are divisible by 3 and are multiples of 7" is true , which one of the following statements is true :
(a)	42 is a Glock.
(b)	All Glock numbers are divisible by 21.
(c)	All numbers divisible by 21 are Glocks.
(d)	7 is a Glock.
(e)	None of the above is true or more than one true statement.
	ar leaves point A going at 28 miles/hour. Five hours later another car leaves point A going 3 miles/hour. How long will it take the second car to catch up with the first?
(a)	5 hours
(b)	12 hours
(c)	4 hours
(d)	7 hours 18 minutes
(e)	None of the above
9. Is tl	he sum of two irrational numbers also an irrational number?
(a)	Always
(b)	Sometimes
(c)	Never
(d)	None of the above
10. Hov	w many different factors does the number 72^3 have?
(a)	40
	50
(c)	60
(d)	70
(e)	None of the above
	pose that a given square and a given circle have the perimeter and circumference equal to a other. Find the ratio of the circle's area to the square's area.
(a)	4
(b)	π
(c)	$\pi/4$
(d)	$4/\pi$
(e)	None of the above