

**2012 Rocket City Junior Math Mania**  
**Individual Test – 7<sup>th</sup> Grade**

1. Evaluate:  $345 - 974$
2. Evaluate:  $\frac{2}{3} \div \frac{5}{6}$
3. If Anne can make three Christmas ornaments an hour and Babs can make two each hour, how many hours would it take them to make 45 ornaments working together?
4. What is the volume, in cubic inches, of a cube with edges measuring 5 in?
5. Express the base 4 number  $321_4$  as a base ten number.
6. Four electric grinders can grind nine pounds of flour in five hours. How many pounds of flour would ten grinders grind in ten hours?
7. A triangle has sides measuring 8 m, 5 m, and 5 m. What is the length of the height to the longest side?
8. What value of  $d$  satisfies the equation  $6d - 122 = 418$ ?
9. What is the next term of the sequence 10, 22, 15, 25, 20, 28, 25, 31, 30, 34, 35, \_\_\_?
10. Evaluate:  $-13 - (-3) \times (-5)$
11. A circle is inscribed inside a square with an area of  $64 \text{ m}^2$ . What is the area of the circle, in square meters? (Leave answer in terms of  $\pi$ .)
12. At Will's birthday party, eight people wanted mushrooms on their pizza, eleven wanted olives, six wanted both, and three wanted neither. How many people were at the party?
13. A pasture contains both people and horses. If you can count twenty heads and fifty feet, how many horses are there?
14. How many positive three-digit integers contain only even digits?
15. Evaluate:  $(6 \times 5^2 - 4 \times 3) \div 2$
16. A right triangle has legs measuring 7 cm and 24 cm. What is the length, in centimeters, of the hypotenuse?
17. If my piggy bank contains only dimes, nickels and pennies, and has fifteen coins worth a total of 48 cents, how many pennies are in the piggy bank?
18. What is the sum of the number of days in a week, the number of edges on a cube, and the number of seconds in an hour?
19. Three years ago, Emerson was twice as old as Frank. Now the sum of Emerson & Frank's ages is 24. How old is Emerson now?

20. Jim has 99 cents using only quarters, dimes, nickels, and pennies. If he has less than 20 pennies and exactly the same number of 3 different types of coins, how many coins does he have?
21. In which quadrant (I, II, III, or IV) does the point  $(3, -7)$  lie?
22. How many positive integers are factors of 72?
23. What is the perimeter, in meters, of a rectangle with sides measuring 13 m and 16 m?
24. When a single card is drawn from a standard 52-card deck, what is the probability that the card shows a prime number?
25. When the magic number is increased by 32 and this result is tripled, the final result is 246. What is the magic number?
26. What is the sum of the positive even numbers less than 50?
27. What is the thirteenth term of an arithmetic sequence with first term 11 and third term 19?
28. What are the coordinates, in the form  $(x, y)$ , of the intersection of the lines  $y = 2x + 3$  and  $2x + 3y = 33$ .
29. What is the median of the data set  $\{3, 9, 1, 2, 15, 6, 7, 4, 2, 11, 2, 19, 15\}$ ?
30. What is the area, in square meters, of a right triangle with legs measuring 4 m and 9 m?