

1. Daniel's fifth birthday is today (Thursday, September 18, 2008). On what day will his 45th birthday fall?
2. Is a trillion and one (1,000,000,000,001) a perfect square? Why or why not?
3. If $x + y = 20$ and $x^2 - y^2 = 120$, what are x and y ?
4. A hat contains 6 balls colored red, orange, yellow, green, blue, and violet. You remove a ball from the hat at random, remove a second ball, and then a third. What is the probability that the first ball will be blue, the second red, and the third yellow? What is the probability that the three balls will be blue, red, and yellow in some order? (Note that you do *not* put the balls back into the hat after you remove them.)
5. How many factors of 3 are there in the number
$$1 \times 2 \times 3 \times 4 \times \cdots \times 100?$$
6. Is there a *quadrilateral* (a four-sided figure) other than a square whose sides are all of the same length?