

# Day 3 Brain Teasers - Week 2

Batch I - Vikings

**Time Limit: 30 Minutes**

June 19, 2019

## 1 Easy Mathematics

1. Frosty the Snowman wants to create a small snowman friend for himself. The new snowman needs a base, torso, and a head, all three of which should be spheres. The torso should be no larger than the base and the head should be no larger than the torso.

For building material, Frosty uses a spherical snowball with a **6 inch** radius. Since Frosty likes to keep things simple, he also wants the radius of each of the three pieces to be a **positive integer** (The radius cannot be a decimal or a fraction).

What is the radius of the base, torso and head of Frosty's friend ?

Submit your answer separated by commas in descending order. eg: 3, 2, 1

**HINT:** The formula for the volume of a sphere is  $V = \frac{4}{3}\pi r^2$  where  $r$  is the radius of the sphere.

2. A snail is at the bottom of a 30 foot well. Every hour the snail is able to climb up 3 feet, then immediately slide back down 2 feet. How many hours does it take for the snail to get out of the well?
3. 100 black and white socks are in a drawer. How many socks must you pull out before you are guaranteed to have a pair? (A pair means 2 socks of the same color)

**Hint:** This is not really a probability question!