

## BCA Sunday Math Team

### Mock AMC 8, November 3<sup>rd</sup>, 2013

The next numbers after  $2013 = 3 \times 11 \times 61$  with three prime factors are

$$2014 = 2 \times 1007 = 2 \times 19 \times 53$$

$$2015 = 5 \times 403 = 5 \times 13 \times 31$$

The volume of a cylinder is  $\pi r^2 h$  where  $r$  is the radius and  $h$  is the height.

If  $r = z$ , and  $h = a$ , and we use “pi” for  $\pi$ , substituting gives us

$$\pi r^2 h = piz^2 a = pi \times z \times z \times a = pizza!$$

#### Contest Answer Key:

1. C	6. D	11.E	16.C	21.A
2. A	7. B	12.C	17.B	22.B
3. D	8. A	13.D	18.C	23.A
4. A	9. E	14.B	19.C	24.D
5. E	10. C	15.D	20.D	25.C

Note that  $\pi = 3.141592653589793238462643 \dots$

If you take each digit mod 5 but keep the 5's as 5, than convert the numbers 1 to A, 2 to B, 3 to C, 4 to D, and 5 to E. The answer sheet to our mock AMC 8 contest is just the first 25 digits of  $\pi$ .