

Name \_\_\_\_\_ School Team \_\_\_\_\_

Event 3: Logic and Reasoning (with calculators) 7th/8th grade Math Meet '08

Part 1: Square number sums (3 pts. each)

$$1^2 = 1 = 1$$

$$2^2 = 4 = 1 + 3$$

$$3^2 = 9 = 1 + 3 + 5$$

$$4^2 = 16 = 1 + 3 + 5 + 7$$

$$5^2 = 25 = 1 + 3 + 5 + 7 + 9$$

$$6^2 = 36 = 1 + 3 + 5 + 7 + 9 + 11$$

$$7^2 = 49 = 1 + 3 + 5 + 7 + 9 + 11 + 13$$

From the above pattern, write the last number of the sum for each square number given. For example, if given  $7^2$ , you'd write 13.

1)  $8^2$  : \_\_\_\_\_

4)  $50^2$  : \_\_\_\_\_

2)  $10^2$  : \_\_\_\_\_

5)  $100^2$  : \_\_\_\_\_

3)  $20^2$  : \_\_\_\_\_

## Part 2: Cubic number sums (5 pts. each)

$$1^3 = 1 = 1$$

$$2^3 = 8 = 3 + 5$$

$$3^3 = 27 = 7 + 9 + 11$$

$$4^3 = 64 = 13 + 15 + 17 + 19$$

$$5^3 = 125 = 21 + 23 + 25 + 27 + 29$$

$$6^3 = 216 = 31 + 33 + 35 + 37 + 39 + 41$$

$$7^3 = 343 = 43 + 45 + 47 + 49 + 51 + 53 + 55$$

From the above pattern, write the last number of the sum for each cubic number given. For example, if given  $7^3$ , you'd write 55.

1)  $8^3$  : \_\_\_\_\_

4)  $50^3$  : \_\_\_\_\_

2)  $10^3$  : \_\_\_\_\_

5)  $100^3$  : \_\_\_\_\_

3)  $20^3$  : \_\_\_\_\_