

YOUR NAME: \_\_\_\_\_

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to **show neatly all your work**. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. A quantity  $y$  varies inversely as the cube of the quantity  $x$ . If 2 units of  $x$  correspond to 32 units of  $y$ , how many units of  $x$  correspond to  $\frac{1}{2}$  units of  $y$ ?

2. Perform the second difference test to detect whether the following data are quadratic:

$x$	-1	0	1	2	3
$y$	8	2	-2	-4	-4

If yes, find a quadratic model manually. If not, find the best power model fitting the data.