Elo Rating

Problem ID: a02p05elorating

In chess, players are rated using the Elo system. The system is designed such that if a player has 100 more Elo than the opponent, then the player will win 64% of the time. Elo rankings can be split into multiple categories.

- A super grandmaster has ≥ 2700 Elo.
- A grandmaster has ≥ 2500 Elo.
- A international grandmaster has ≥ 2400 Elo.
- Let's call a chess player with < 2400 Elo amateur.

Ratings are considered valid if they are > 999.
Write a program that reads in a chess Elo rating and prints `Super grandmaster`, `Grandmaster`, `International grandmaster`, `Amateur` or `Invalid` depending on the input.

Input

Input consists of one line containing one integer $rating$, where $-10^6 \leq rating \leq 10^6$.

Output

Output consists of one line, the Elo category.

Sample Input 1	Sample Output 1
`1`	`Invalid`

Sample Input 2	Sample Output 2
`1000`	`Amateur`

Sample Input 3	Sample Output 3
`2401`	`International grandmaster`

Sample Input 4	Sample Output 4
`2600`	`Grandmaster`

Sample Input 5	Sample Output 5
`2800`	`Super grandmaster`