A very rich prince has exactly $n$ diamonds. Each diamond $1 \leq i \leq n$ has a certain value $v_i$. Tradition says that, before getting married, the prince has to give a present of value exactly $V$ to his princess. The prince wants to give her exactly two of his diamonds, but he does not know how to decide quickly if he can do it or not. Can you help to this stupid?

For instance, if $n = 6$ and the value of the diamonds is 5, 8, 6, 2, 6, 20, then it is possible to give a present of value $V = 10 (8 + 2)$ or a present of value $V = 12 (6 + 6)$, but it is impossible to give a present of value $V = 9$.

**Input**

Input consists of several cases. Each case begins with the gift value $V$ (a natural number between 1 and $10^8$) and the number $n$ of diamonds (a natural number between 1 and $10^5$) in this order. Then come $n$ natural numbers between 1 and $10^8$ indicating the value of each diamond. A case with $V = n = 0$ marks the end of the input.

**Output**

For each case, print a line with “married” or “single” depending on whether the prince can give the present or not.

**Sample input**

```
12 6
5 8 6 2 6 20
9 6
5 8 6 2 6 20
0 0
```

**Sample output**

```
marrried
single
```