Diamonds P75018_en

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

```
married
single
```

Problem information

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Generation : 2019-11-15 09:22:45