

L: Post Office

Time Limit: 1 second(s)

Other than postcards, the post office department of some country recognizes three classes of mailable items: letters, packets and parcels. The three dimensions of a mailable item are called length, height and thickness, with length being the largest and thickness the smallest of the three dimensions.

A letter's length must be at least 125 mm but not more than 290 mm, its height at least 90 mm but not more than 155 mm and its thickness at least 0.25 mm but not more than 7 mm.

All three of a packet's dimensions must be greater than or equal to the corresponding minimum dimension for a letter and at least one of its dimensions must exceed the corresponding maximum for a letter. Furthermore, a packet's length must be no more than 380 mm, its height no more than 300 mm and its thickness no more than 50 mm.

All three of a parcel's dimensions must be greater than or equal to the corresponding minimum dimension for a letter and at least one of its dimensions must exceed the corresponding maximum for a packet. Furthermore, the parcel's combined length and girth may not exceed 2 100 mm. The girth is the full perimeter measured around the parcel, perpendicular to the length.

Input

The input will contain data for a number of problem instances. For each problem instance, the input will consist of the three dimensions of an item, measured in mm, in any order. The length and width will be positive integers. The thickness will be either a positive integer or a positive floating point number.

The input will be terminated by a line containing three zeroes.

Output

For each problem instance, output the classification of the item on a single line as **letter**, **packet**, **parcel** or **not mailable**. Use only lower case letters.

Sample Input and Output

Sample Input 1	Output for Sample Input
100 120 100	not mailable
0.5 100 200	letter
100 10 200	packet
200 75 100	parcel
0 0 0	