--- Day 4: Scratchcards ---

The gondola takes you up. Strangely, though, the ground doesn't seem to be
coming with you; you're not climbing a mountain. As the circle of Snow
Island recedes below you, an entire new landmass suddenly appears above
you! The gondola carries you to the surface of the new island and lurches
into the station.

As you exit the gondola, the first thing you notice is that the air here is
much warmer than it was on Snow Island. It's also quite humid. Is this
where the water source is?

The next thing you notice is an Elf sitting on the floor across the station
in what seems to be a pile of colorful square cards.

"Oh! Hello!" The Elf excitedly runs over to you. "How may I be of service?"
You ask about water sources.

"I'm not sure; I just operate the gondola lift. That does sound like
something we'd have, though - this is Island Island, after all! I bet the
gardener would know. He's on a different island, though - er, the small
kind surrounded by water, not the floating kind. We really need to come up
with a better naming scheme. Tell you what: if you can help me with
something quick, I'll let you borrow my boat and you can go visit the
gardener. I got all these scratchcards as a gift, but I can't figure out
what I've won."

The Elf leads you over to the pile of colorful cards. There, you discover
dozens of scratchcards, all with their opaque covering already scratched
off. Picking one up, it looks like each card has two lists of numbers
separated by a vertical bar (|): a list of winning numbers and then a list
of numbers you have. You organize the information into a table (your puzzle
input).

As far as the Elf has been able to figure out, you have to figure out which
of the numbers you have appear in the list of winning numbers. The first
match makes the card worth one point and each match after the first doubles
the point value of that card.

For example:

```
Card 1: 41 48 83 86 17 | 83 86  6 31 17  9 48 53
Card 2: 13 32 20 16 61 | 61 30 68 82 17 32 24 19
Card 3:  1 21 53 59 44 | 69 82 63 72 16 21 14  1
Card 4: 41 92 73 84 69 | 59 84 76 51 58  5 54 83
Card 5: 87 83 26 28 32 | 88 30 70 12 93 22 82 36
Card 6: 31 18 13 56 72 | 74 77 10 23 35 67 36 11
```

In the above example, card 1 has five winning numbers (41, 48, 83, 86, and
17) and eight numbers you have (83, 86, 6, 31, 17, 9, 48, and 53). Of the
numbers you have, four of them (48, 83, 17, and 86) are winning numbers!
That means card 1 is worth 8 points (1 for the first match, then doubled
three times for each of the three matches after the first).

  - Card 2 has two winning numbers (32 and 61), so it is worth 2 points.
  - Card 3 has two winning numbers (1 and 21), so it is worth 2 points.
  - Card 4 has one winning number (84), so it is worth 1 point.
  - Card 5 has no winning numbers, so it is worth no points.
  - Card 6 has no winning numbers, so it is worth no points.

So, in this example, the Elf's pile of scratchcards is worth 13 points.

Take a seat in the large pile of colorful cards. How many points are they
worth in total?

Your puzzle answer was 26914.

The first half of this puzzle is complete! It provides one gold star: *

--- Part Two ---

Just as you're about to report your findings to the Elf, one of you
realizes that the rules have actually been printed on the back of every
card this whole time.

There's no such thing as "points". Instead, scratchcards only cause you to
win more scratchcards equal to the number of winning numbers you have.

Specifically, you win copies of the scratchcards below the winning card
equal to the number of matches. So, if card 10 were to have 5 matching
numbers, you would win one copy each of cards 11, 12, 13, 14, and 15.

Copies of scratchcards are scored like normal scratchcards and have the
same card number as the card they copied. So, if you win a copy of card 10
and it has 5 matching numbers, it would then win a copy of the same cards
that the original card 10 won: cards 11, 12, 13, 14, and 15. This process
repeats until none of the copies cause you to win any more cards. (Cards
will never make you copy a card past the end of the table.)

This time, the above example goes differently:

```
Card 1: 41 48 83 86 17 | 83 86  6 31 17  9 48 53
Card 2: 13 32 20 16 61 | 61 30 68 82 17 32 24 19
Card 3:  1 21 53 59 44 | 69 82 63 72 16 21 14  1
Card 4: 41 92 73 84 69 | 59 84 76 51 58  5 54 83
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```

  - Card 1 has four matching numbers, so you win one copy each of the next
    four cards: cards 2, 3, 4, and 5.
  - Your original card 2 has two matching numbers, so you win one copy
    each of cards 3 and 4.
  - Your copy of card 2 also wins one copy each of cards 3 and 4.
  - Your four instances of card 3 (one original and three copies) have two
    matching numbers, so you win four copies each of cards 4 and 5.
  - Your eight instances of card 4 (one original and seven copies) have
    one matching number, so you win eight copies of card 5.
  - Your fourteen instances of card 5 (one original and thirteen copies)
    have no matching numbers and win no more cards.
  - Your one instance of card 6 (one original) has no matching numbers and
    wins no more cards.

Once all of the originals and copies have been processed, you end up with 1
instance of card 1, 2 instances of card 2, 4 instances of card 3, 8
instances of card 4, 14 instances of card 5, and 1 instance of card 6. In
total, this example pile of scratchcards causes you to ultimately have 30
scratchcards!

Process all of the original and copied scratchcards until no more
scratchcards are won. Including the original set of scratchcards, how many
total scratchcards do you end up with?

Answer: [_____] [Submit]

Although it hasn't changed, you can still get your puzzle input.

You can also [Share] this puzzle.