Problem of the Week
Problem A and Solution
Gathering Flowers

Problem

Julian grows five different types of flowers in his garden: lilies, crocuses, tulips, daisies, and roses. He picks some flowers from his garden and makes the following observations about the flowers he picked:

> There are four more daisies than lilies.
> There are twice as many roses as crocuses.
> There are half as many tulips as daisies.
> There are two fewer lilies than roses.
> There are five crocuses.

How many of each type of flower did Julian pick? Justify your answer.

Solution

Since we know there are 5 crocuses and we know that there are twice as many roses as crocuses, there must be $5 \times 2 = 10$ roses.

Since we know there are 10 roses and we know that there are 2 fewer lilies than roses, there must be $10 - 2 = 8$ lilies.

Since we know there are 8 lilies and we know that there are 4 more daisies than lilies, there must be $8 + 4 = 12$ daisies.

Since we know there are 12 daisies and we know that there are half as many tulips as daisies, there must be $12 \div 2 = 6$ tulips.

In summary Julian picked:
5 crocuses, 10 roses, 8 lilies, 12 daisies, and 6 tulips.