

1) What is the formula below used for?  

$$\frac{n(n+1)}{2}$$

2) What is the formula below used for?  

$$n^2$$

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3) Find  $1+2+3+\dots+33$       4) Find  $1^2+3^2+\dots+33^2$

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## Section 1-3

### Strategies for Problem Solving

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### The Method of Problem Solving

1. Understand the problem
2. Devise a plan
3. Carry out the plan
4. Look back and check (Does the solution make sense?)

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### 1.3 Strategies for solving a situation (problem)

#### General Problem-Solving Methods

- Use a \_\_\_\_\_ or \_\_\_\_\_
- Work Backwards
- Use \_\_\_\_\_ and \_\_\_\_\_
- Guess and \_\_\_\_\_
- Consider a \_\_\_\_\_ Similar Problem
- Draw a Sketch
- Use \_\_\_\_\_ Sense

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### Example: Using a Table or Chart

A man put a pair of rabbits in a cage. During the first month the rabbits produced no offspring but each month thereafter produced one new pair of rabbits. If each new pair produced reproduces in the same manner, how many pairs of rabbits will there be at the end of the 5<sup>th</sup> month?

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### Example (solution continued)

*Step 3 Carry out the plan.*

Month	Number of Pairs at Start	Number Produced	Number of Pairs at the End
1st	1	0	1
2nd	1	1	2
3rd	2	1	3
4th	3	2	5
5th	5	3	?

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## Example: Working Backward



Find the unknown number.

Start with an unknown number. Triple it and then subtract 5. Now, take the new number and double it but then subtract 47. If you take this latest total and quadruple it you have 60.

What was the unknown number?

The final amount was 60.

Divide by 4 to undo quadruple = 15.

Add 47 to get 62, then divide by 2 = 31.

Add 5 to get 36 and divide by 3 = 12.



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## Example: Solution

### Solution

The original unknown number was 12.

*Step 4* **Look back and check.** We can take 12 and run through the computations to get 60.



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