

# Solve Problems Using Patterns

**Goal** Identify patterns to solve problems.

1. What pattern could you use to add these numbers?  
Write a number sentence to show the pattern.

$$1 + 2 + 3 + 4 + \dots + 37 + 38 + 39 + 40$$

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2. Use a pattern to add these numbers.  
Show your work.

$$15 + 25 + 35 + 45 + 55 + 65 + 75 + 85$$

## At-Home Help

Pairing numbers can help you find sums more easily. Try to find pairs that add up to the same number.

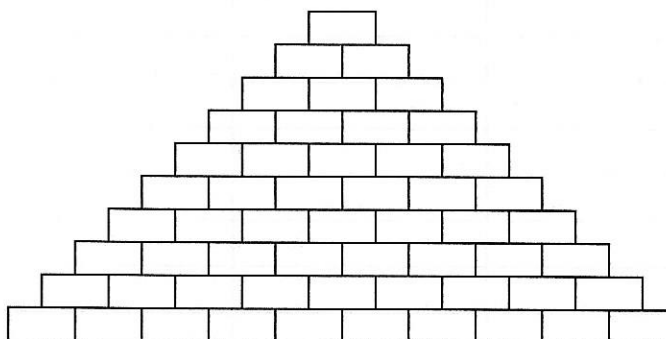
For example, to add

$$1 + 3 + 5 + 7 + 9 + 11$$

notice that  $1 + 11$ ,  $3 + 9$ ,  
and  $5 + 7$  all add up to 12.

$$\begin{aligned} \text{sum} &= (1 + 11) + (3 + 9) + (5 + 7) \\ &= 12 + 12 + 12 \\ &= 36 \end{aligned}$$

3. Glynis is stacking boxes of candles for a store display.



- a) Make a plan that uses a pattern to find the number of boxes in the stack.  
Use number sentences and words.

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- b) Use your plan to find the total number of boxes in the stack.

- c) How many boxes would there be in a stack that has 16 boxes in the bottom row?  
Explain your answer using number sentences and words.

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