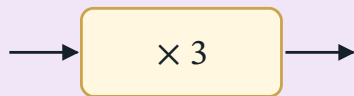


SOLVE THE PATTERN 5, 9, 13, 17 TO REACH 61

- 1 Write the rule in words: multiply position by 4 then add 1.
- 2 Write the expression: $4n + 1$.
- 3 Set up the equation: $4n + 1 = 61$.
- 4 Take away 1: $4n = 60$.
- 5 Share by 4: $n = 15$.

 WARM-UP

Draw the number line for the game scores and mark the positions.



1. Mark 4, 7 and 10 on the line for the first three game scores
2. Mark 21 and 53 on the line for the next score and the target
3. Mark 100 and 340 on the line for the far term and top score

 PRACTICE

- 1 In the board game the 12th card scores 6 times its position plus 2 points.

$$6n + 2 = \underline{\hspace{2cm}}$$

- 2 The play mat shows position 11 gives 3 times n plus 1 points in the game.

$$3n + 1 = \underline{\hspace{2cm}}$$

- 3 The video game level scores start 4, 7, 10, 13 and the 100th level needs the rule.

Find the 100th number in 4, 7, 10, 13

- 4 The puzzle game sequence 3, 5, 7, 9 reaches the 10th prize with the rule.

Find the 10th term in 3, 5, 7, 9

- 5 The card game position n scores $3n$ plus 4 and the top score is 340.

$$3n + 4 = \underline{\hspace{2cm}}$$

? ALWAYS, SOMETIMES, NEVER

Always, sometimes or never true? Write A, S or N.

- a. The rule for 4, 7, 10, 13 is $3n + 1$.
- b. For 4, 7, 10, 13, you can find the 100th term without listing every number.
- c. The expression $3n + 1$ works for the pattern 5, 9, 13, 17.
- d. Finding a term from its term number takes two steps, like 'multiply, then add'.

REFLECT

Where this year did using a letter for an unknown make a problem easier?