Preliminary Planning Sheet
Pom-poms

Problem Solving for the 21st Century Unit of Study:
Multiplication Unit

Major Underlying Mathematical Concepts
- Creating multiplication situations to match an expression
- Finding the product when both factors are known
- Commutative Property
- Number sense to 28

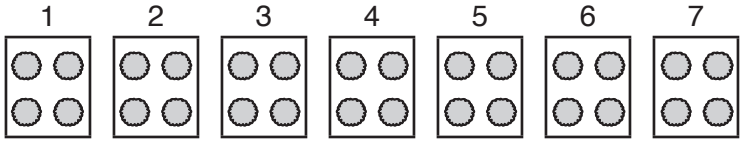
Possible Problem-Solving Strategies
- Model (manipulatives)
- Diagram/Key
- Table
- Tally chart
- Arrays
- Number line

Possible Mathematical Vocabulary/Symbolic Representation
- Model
- Diagram/Key
- Table
- Tally chart
- Number line
- Array
- Product
- Factor
- Set
- Total/Sum
- Dozen
- Greater than (>)/Less than (<)
- Equivalent/Equal to
- Odd/Even
- Equation
- Expression
- Row/Column
- Rule
- Variable

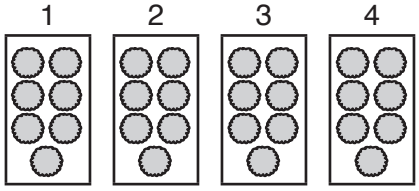
Possible Solution(s)

Answer

Amy is correct.



7 x 4 = 28



4 x 7 = 28

Key

is 1 pom-pom

is 1 package

Package	Pom-poms
1	4
2	8
3	12
4	16
5	20
6	24
7	28

Package	Pom-poms
1	||||
2	||||
3	||||
4	||||
5	||||
6	||||
7	||||

Package	1	2	3	4
Pom-poms	7	14	21	28

Rule

p is package

t is total pom-poms

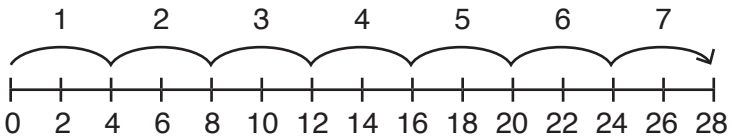
4 • **p** = **t**

7 • **p** = **t**

28 = 28

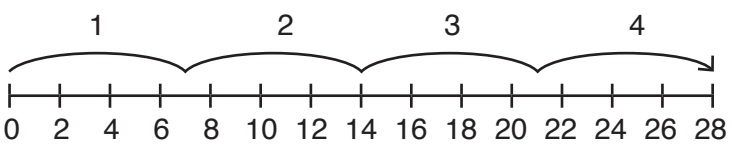
Package	Pom-poms
1	卌 ||
2	卌 ||
3	卌 ||
4	卌 ||

Packages



Pom-poms

Packages



Pom-poms

Preliminary Planning Sheet (cont.)
Pom-poms

Problem Solving for the 21st Century Unit of Study:
Multiplication Unit

Possible Connections

- Patterns in table: Packages +1, Pom-poms +7 or +4.
- The +4 pom-pom pattern is always even.
- The +7 pom-pom pattern is odd, even, odd, even ...
- When you add equal groups on a number line, you jump over the same number of spaces each time moving to the right, away from 0.
- The number of equal sets of 4 is extended beyond 7.
- The number of equal sets of 7 is extended beyond 4.
- Solve more than one way to verify the answer.
- Relate to a similar task and state a math link.
- 4 is an even number. 7 is an odd number. An even number times an odd number is an even number.