Skill Set 12: Make Suppositions

Making suppositions is another higher-order heuristic skill that is often used for upper primary mathematical problems. It requires one to make an assumption to a given problem before attempting to solve it.

Example:
A farmer has 60 chickens and cows. They have a total of 144 legs. How many chickens does the farmer have?

Think
- Make assumptions that the farmer has either all chickens or all cows.
- Look for shortage or excess of legs and solve accordingly.

Solve
Assuming all are chickens:
- total number of legs = 60 × 2 = 120
- difference in total number of legs = 144 - 120 = 24 (excess)
- difference in number of legs of chicken and cow = 4 - 2 = 2
- cows = 24 ÷ 2 = 12
- chickens = 60 - 12 = 48

Answer: The farmer has 48 chickens.

Give it a try!

Another farmer has 70 chickens and cows. They have a total of 240 legs. How many cows does the farmer have?

Think
- Again look for shortage or excess of legs and solve accordingly.

Solve
Assuming all are cows:
- total number of legs = _____ × _____ = _____
- difference in total number of legs = _____ - _____ = _____
- difference in number of legs of chicken and cow = _____ - _____ = _____ ( )
- chickens = _____ ÷ _____ = _____
- cows = _____ - _____ = _____

Answer: The farmer has _______ cows.
Practice: Make Suppositions

1. Zach has 50 5¢ coins and 10¢ coins. The total value of the coins is $3.30. How many 5¢ coins does Zach have?

Think

Solve

Answer

2. There are 50 beetles and spiders in a tank. They have a total of 328 legs. How many beetles are in the tank?

Think

Solve

Answer
3. A school paid $432 for admission tickets to a museum for 101 students and teachers. If an adult ticket cost $6 and a student ticket cost $4, how many adult tickets did the school buy?

**Think**

**Solve**

**Answer**

4. Vanessa packed 255 cookies into a total of 20 boxes. A box can contain 12 cookies or 15 cookies. How many boxes of 12 cookies did Vanessa pack?

**Think**

**Solve**

**Answer**
5. An office manager purchased 37 calendars and organizers for $367.50. If each calendar cost $6.80 and each organizer cost $12.90, how many organizers did the manager purchase?

Think

Solve

Answer