

2.6 Problem Solving Day 1



Problem Solving Strategy

Step 1: Identify two *unknowns* variables.

Step 2: Write two equations.

Step 3: Solve using substitution or elimination.

Step 4: Conclude.

Step 5: Mental check.

2.6 Problem Solving Day 1

Ex 1: Gita has 35 coins in nickels and quarters. In all, she has \$4.15. How many of each kind of coin does she have?

Let n be the number of nickels
 Let q " " " " quarters

① $n + q = 35$

② $0.05n + 0.25q = 4.15$

① $\Rightarrow n = 35 - q$ ③

Sub ③ into ②

$$0.05(35 - q) + 0.25q = 4.15$$

$$1.75 - 0.05q + 0.25q = 4.15$$

$$0.20q = 2.4$$

$$q = \frac{2.4}{0.2}$$

$$q = 12$$

Sub $q = 12$ into ①

$$n + 12 = 35$$

$$n = 23$$

\therefore Gita has

12 quarters

23 nickels

Formal Check

① $n + q = 35$

LS	RS
$n + q$	35
$= 23 + 12$	
$= 35$	
✓	

② $0.05n + 0.25q = 4.15$

LS	RS
$0.05(23) + 0.25(12)$	4.15
$= 1.15 + 3$	
$= 4.15$	
✓	

Ex 2: In a collection of coins there are twice as many nickels as dimes. Find the number of each coin if the collection is worth \$10.60.

Ex 3: The larger of two numbers is 8 more than four times the smaller. If the larger is increased by 4 times the smaller, the result is 40. Find the numbers.

Ex 4: The length of a rectangle is 4cm less than 3 times the width. The perimeter is 64cm. Determine the length and width.

Ex 5: Sportchek sells Asics running shoes for \$82 a pair and New Balance running shoes for \$95 a pair. One day, Sportcheck sold 75 pairs of Asics and New Balance shoes for \$6241. How many pairs of each shoe were sold?

Practice!

Set 1: p.18 #11,13,14 (no graphing; use sub/elim)

Set 2: p.18 #13,14,17 (do not graph; use sub/elim)