

1. Ms. Chang's class decides to use the *Cool Tee's* company to make their T-shirts. The following equation represents the relationship between cost C and the number of T-shirts n .

$$C = 2n + 20$$

- The class wants to buy 25 T-shirts from *Cool Tee's*. Describe how you can use a table and a graph to find the cost for 25 T-shirts.
- Suppose the class has \$80 to spend on T-shirts. Describe how you can use a table and a graph to find the number of T-shirts the class can buy.
- Sophia writes the following equation in her notebook:

$$C = 2(15) + 20$$

What information is Sophia looking for?

- Elisa uses the coordinates (30, 80) to find information about the cost of the T-shirts. What information is she looking for?

2. The following equations represent some walkathon pledge plans.

Plan 1: $14 = 2x$

Plan 2: $y = 3.5(10) + 10$

Plan 3: $100 = 1.5x + 55$

In each equation, y is the amount owed in dollars, and x is the number of kilometers walked. For each equation:

- Tell what information is unknown.
- Describe how you could find the information.

3. Find the solution (the value of the variable for each equation).

a. $y = 3(10) + 15$ b. $24 = x + 2$ c. $10 = 2x + 4$

4. Consider the equation: $y = 5x - 15$.

- Find y if $x = 1$.
- Find x if $y = 50$.
- Describe how you can use a table or graph to answer parts (a) and (b).

In the Kingdom of Montarek, the ambassadors carry diplomatic pouches. The contents of the pouches are unknown except by the ambassadors. Ambassador Milton wants to send one-dollar gold coins to another country.



\$1 gold coin



diplomatic pouch

His daughter, Sarah, is a mathematician. She helps him devise a plan based on *equality* to keep track of the number of one-dollar gold coins in each pouch.

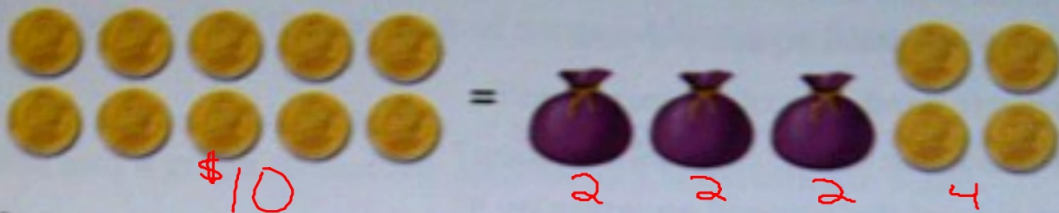
In each situation:

- Each pouch contains the same number of one-dollar gold coins.
- The number of gold coins on both sides of the equality sign is the same, but some coins are hidden in the pouches.

Try to find the number of gold coins in each pouch.

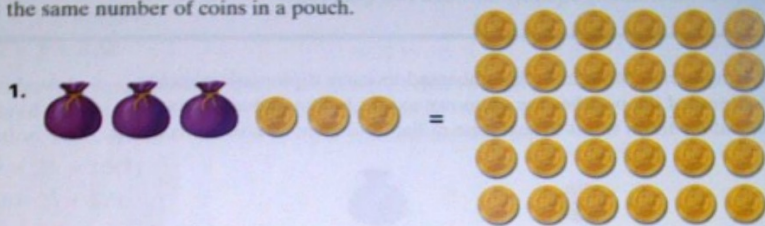


A. Sarah draws the following picture. Each pouch contains the same number of \$1 gold coins.



How many gold coins are in each pouch? Explain your reasoning.

B. For each situation, find the number of gold coins in the pouch. Write down your steps so that someone else could follow your steps to find the same number of coins in a pouch.



$\text{pouch} = \$9$



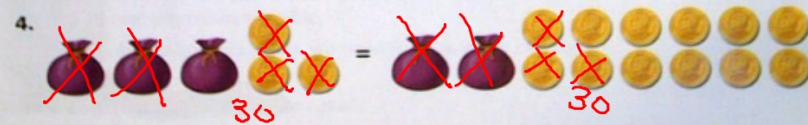
$\text{pouch} = \$4$



36

36

$\text{pouch} = \$12$



30

30

$\text{pouch} = \$9$



33

33

$\text{pouch} = \$6$