

TRANSLATING SYSTEMS OF EQUATIONS

STEPS:

1. Let  $x$  be something and let  $y$  be the other
2. Write two different equations using variables  $x$  and  $y$
3. Meaning of some key words:

Sum means +  
 Total means +  
 Difference means -  
 Times more means  $\times$

$x = \#$  of apples       $y = \#$  of oranges

Ex 1: Mario buys two times more apples than oranges. Mario bought a total of 12 fruits. Which system of equations translates this situation.

A)  $2x = y$   
 $x + y = 12$

B)  $x = 2y$   
 $2x + y = 12$

C)  $x = 2y$   
 $x + y = 12$

D)  $x = y$   
 $x + y = 12$

$x + y = 12$

$x = 2y$

Ex 2: Elise is two times Natasha's age. The sum of their ages equals to 45. Which system of equations translates this situation?

A)  $2x = y$   
 $x + y = 45$

B)  $x = 2y$   
 $x + y = 45$

C)  $2x = y$   
 $x + 2y = 45$

D)  $x = 2y$   
 $2x + y = 45$

$x = \text{Elise's Age}$   
 $y = \text{Natasha's Age}$

$x = 2y$   
 $x + y = 45$

Ex 3: Greg buys three times more hockey cards than baseball cards. He bought a total of 40 cards. Which system of equations translates this situation?

~~A)  $3x = y$   
 $x + y = 40$~~

B)  $x = 3y$   
 $3x + y = 40$

C)  $3x = y$   
 $x + y = 40$

D)  $x = 3y$   
 $x + y = 40$

$x = \#$  of hockey cards  
 $y = \#$  of baseball cards

$x = 3y$   
 $x + y = 40$

**PRACTICE**

1. Mario buys four times more apples than oranges. Mario bought a total of 50 fruits. Which system of equations translates this situation?

A)  $x = 4y$   
 $x + y = 50$

B)  $4x = y$   
 $x + y = 50$

C)  $x = 4y$   
 $x + 4y = 50$

D)  $x = 4y$   
 $4x + y = 50$

2. Brandon is two times older than Marc. The sum of the triple of Brandon's age with Marc's age equals to 70 years. Which system of equations translates this situation?

A)  $2x = y$   
 $x + y = 70$

B)  $x = 2y$   
 $3x + y = 70$

C)  $x = 2y$   
 $x + y = 70$

D)  $3x = y$   
 $x + 3y = 70$

3. Lindsay is three times older than Jen. The sum of Lindsay's age with the double of Jen's age equals to 50 years. Which system of equations translates this situation?

A)  $3x = y$   
 $x + y = 50$

B)  $x = 3y$   
 $2x + y = 50$

C)  $x = 3y$   
 $x + 2y = 50$

D)  $3x = y$   
 $2x + y = 50$

c)  $x$ : Cost per sweater  
 $y$ : Cost per pair of pants

$$\begin{cases} 2x + 3y = 220 \\ 3x + 2y = 230 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 660 \\ + -6x - 4y = -460 \\ \hline \end{array}$$

$$\frac{5y}{5} = \frac{200}{5}$$

$$\underline{\underline{y = 40}}$$

← A pair of pants costs \$40.

$$x = ? \quad y = 40$$

$$2x + 3y = 220$$

$$2x + 3(40) = 220$$

$$2x + 120 = 220$$

$$\frac{2x}{2} = \frac{100}{2}$$

$$x = 50\$$$

← price of sweater

Sandra:

$$4(50) + 2(40) = 280\$$$