2.3 Day 2

EXAMPLE 4

The Seahawks football team scores 42 points by scoring touchdowns and field goals. Suppose each field goal is worth 3 points and each touchdown is worth 7 points.

a) Define your variables.

x: number of field goals

y: number of touchdowns

b) Write an equation to represent the scenario.

$$3x + 7y = 42$$

b) Find the x-intercept and interpret the meaning.

$7y = 42$

$y = 6$

$(0,6)$ y-int

If the seahawks score 0 field goals, they score 6 touchdowns

d) Find the y-intercept and interpret the meaning.

x-int. $3x = 42$

$x = 14$

$(14,0)$

If the seahawks score 0 touchdowns, they score 14 field goals.

You try....The DECA club has $90 to spend on pens and pencils. Each pen costs $0.75 and each pencil costs $0.15.

a) Define your variables

x: number of pencils

y: number of pens

b) Write an equation to represent the scenario

$$0.15x + 0.75y = 90$$

c) What is the max number of pens the club can buy?

$0.75y = 90$

$y = 120$

120 pens

d) What is the max number of pencils the club can buy?

$0.15x = 90$

$x = 600$

600 pencils

EXAMPLE 5

Tamira is making trail mix. She has $40 to spend on a mixture of almonds and cashews and wants about the same amount of almonds as cashews. How can she determine how many pounds of each kind of nut to buy?

Step 1 Define variables

x: amount of almonds

y: amount of cashews

Step 2

$$8x + 10y = 40$$

Step 3 Find x and y intercept

X-intercept (y=0)

$8x = 40$

$x = 5$

$(5,0)$

y-intercept (x=0)

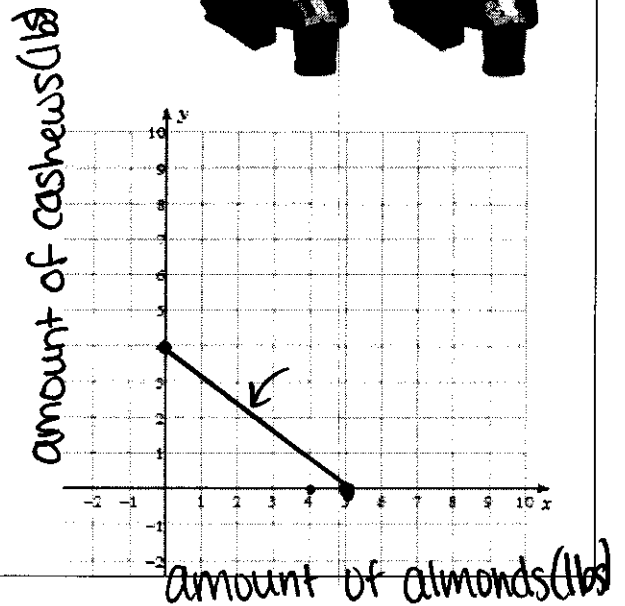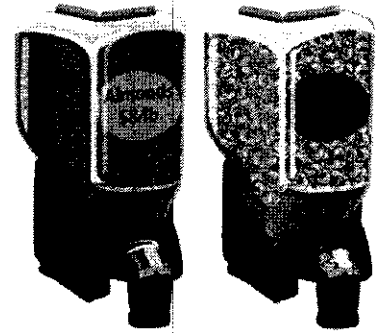$10y = 40$

$y = 4$

$(0,4)$

Step 4 label graph and plot points then draw line Note: line segment since we can't have negative almonds or cashews

Step 5 Find middle point

$(2.5, 2)$ about 2.5lbs of almonds and 2lbs of cashews

amount of cashews(lbs) / amount of almonds(lbs)

Try it... John is making a coffee blend where he mixes about the same amount of Arabic coffee and Robusta coffee. He has $60 to spend on the mixture and wants about the same amount of Robusta coffee and Arabic coffee. Arabic coffee costs $6 a pound and Robusta coffee cost $4 a pound. How much of each should he buy?

X: Arabic Coffee

y: Robusta Coffee

$$6x + 4y = 60$$

X-int

$$6x = 60$$

$$x = 10$$

$$(10, 0)$$

y-int

$$4y = 60$$

$$y = 15$$

$$(0, 15)$$

About 6 lbs of each Coffee

Robusta Coffee (lbs) vs Arabic coffee (lbs)