## Solving Problems Involving Linear Inequalities in Two Variables

Total points = 25

1. Solution

Given: cost of a kilo of beef ✓ 250 cost of a kilo of beef ✓ Let: Ь cost of a kilo of fish  $\checkmark$ f Find: maximum cost of a kilo of fish ✓ Inequality: 2b+3f700 √ Original inequality  $2b + 3f < 700 \checkmark$ Substitute b = 2502(250) + 3f < 700  $\checkmark$ Simplify 500 + 3*f* < 700 ✓ Use Subtraction Prop. 500 - 500 + 3f < 700 - 500Simplify 3*f* < 200 ✓  $\frac{3f}{} < \frac{200}{}$ Use Division Prop. 3 Simplify *f* < 66.67 ✓

Therefore, the maximum cost of a kilo of fish to the nearest pesos is Php 67.  $\checkmark$ 

2. Solution

Simplify

Connie's score ✓ Given: 32 Let: Connie's score ✓ Minnie's score ✓ Find: possible score of Minnie Inequality: c-m < 6 🗸  $c-m \leq 6$ Original inequality Substitute c = 32 $32 - m \le 6$   $\checkmark$ Use Subtraction Prop.  $32 - 32 - m \le 6 - 32 \checkmark$ Simplify -*m* ≤ -26 **√** Use Multiplication Prop.  $-\mathbf{1}(-m) \leq -\mathbf{1}(-26) \checkmark$ 

Therefore, the possible score of Minnie is greater than or equal to 26.

m ≥ 26 **√** 

cost of a kilo of beef ✓

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1. Solution Given:

Let: Ь cost of a kilo of beef ✓ f cost of a kilo of fish ✓ maximum cost of a kilo of fish < Find: Inequality: 2b+3fOriginal inequality  $2b + 3f < 700 \checkmark$ Substitute b = 250 $2(250) + 3f < 700 \checkmark$ Simplify 500 + 3*f* < 700 ✓ Use Subtraction Prop. 500 - 500 + 3f < 700 - 500Simplify 3f < 200 ✓  $\frac{3f}{2} < \frac{200}{2}$ Use Division Prop. Simplify *f* < 66.67 ✓

Therefore, the maximum cost of a kilo of fish to the nearest pesos is Php 67.  $\checkmark$ 

2. Solution

Connie's score ✓ Given: 32 Let: Connie's score ✓ С Minnie's score ✓ m possible score of Minnie 🗸 Inequality:  $c - m \le$ 6 🗸 Original inequality  $c-m \leq 6$ Substitute c = 32 $32 - m \le 6$   $\checkmark$ Use Subtraction Prop.  $32 - 32 - m \le 6 - 32 \checkmark$ Simplify -*m* ≤ -26 ✓ Use Multiplication Prop.  $-1(-m) \le -1(-26)$ Simplify m ≥ 26 **√** 

Therefore, the possible score of Minnie is greater than or equal to 26.

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Therefore, the maximum cost of a kilo of fish to the nearest pesos is Php 67.  $\checkmark$ 

Solution

```
Given:
                          Connie's score ✓
                32
Let:
                          Connie's score ✓
                 С
                          Minnie's score ✓
Find:
                          possible score of Minnie 

Inequality: c - m <
                          6 √
Original inequality
                              c − m ≤ 6 ✓
 Substitute c = 32
                              32 - m \le 6 \checkmark
                              32 - 32 - m \le 6 - 32
 Use Subtraction Prop.
 Simplify
                              -m ≤ -26 ✓
 Use Multiplication Prop.
                              -1(-m) \le -1(-26)
 Simplify
                              m ≥ 26 √
```

Therefore, the possible score of Minnie is greater than or equal to 26.

Solving Problems Involving Linear Inequalities in Two Variables

Total points = 25

Solution

```
Given:
                              cost of a kilo of beef ✓
                  250 =
Let:
                              cost of a kilo of beef ✓
                              cost of a kilo of fish ✓
                              maximum cost of a kilo of fish ✓
Find:
Inequality: 2b+3f
   Original inequality
                                 2b + 3f < 700 \checkmark
   Substitute b = 250
                                 2(250) + 3f < 700 \checkmark
   Simplify
                                 500 + 3f < 700 ✓
   Use Subtraction Prop.
                                 500 - 500 + 3f < 700 - 500
   Simplify
                                 3f < 200 ✓
                                 \frac{3f}{2} < \frac{200}{2}
   Use Division Prop.
   Simplify
                                 f < 66.67 ✓
```

Therefore, the maximum cost of a kilo of fish to the nearest pesos is Php 67.  $\checkmark$ 

2. Solution

```
Connie's score ✓
Given:
                 32
Let:
                           Connie's score ✓
                  С
                 m
                           Minnie's score ✓
                           possible score of Minnie ✓
Find:
Inequality: c - m \le
                               c-m \leq 6
 Original inequality
 Substitute c = 32
                               32 - m \le 6 \checkmark
 Use Subtraction Prop.
                               32 - 32 - m \le 6 - 32
 Simplify
                               -m \le -26 \checkmark
 Use Multiplication Prop.
                               -1(-m) \le -1(-26)
 Simplify
                               m ≥ 26 √
```

Therefore, the possible score of Minnie is greater than or equal to 26.