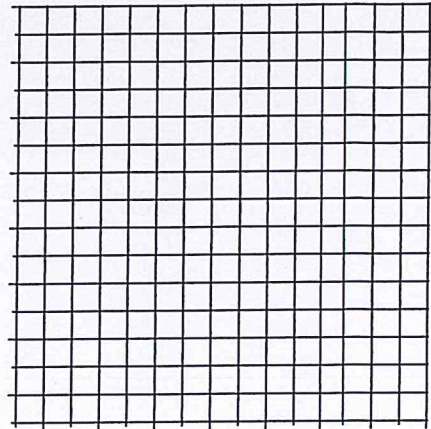# Bellwork   Alg 2A · Tuesday, December, 2016

An artist is going to make some coffee mugs and some flower vases to sell. It takes 4.5 hours to make a coffee mug and 3 hours to make a flower vase. The artist has only 36 hours to spend making these items. The artist also only has enough clay to make up to 10 items to sell.

   1. Write a system of 4 inequalities to model this situation.   2. Graph this system

   3. Find the coordinates of the corners of the feasible region.

   4. The artist is going to sell each coffee mug for $25 and each flower vase for $20.
   a. Write the Objective Function

   b. How many of each item should the artist make in order to maximize their income?

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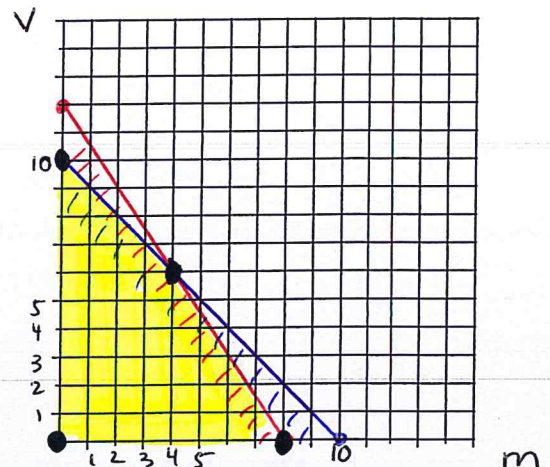
   1. Write a system of 4 inequalities to model this situation.   2. Graph this system

$m = \#\,mugs$

$v = \#\,vases$

$\ast\ 4.5m + 3v \le 36$ ┐ $m\text{-}int = 8$
                          $v\text{-}int = 12$

$\ast\ m + v \le 10$ ── $m\ \&\ v\text{-}int = 10$

$m \ge 0$ ┐
          ├── 1st quadrant
$v \ge 0$ ┘

   3. Find the coordinates of the corners of the feasible region.
          $(0,0)\quad (8,0)\quad (4,6)\quad (0,10)$
   4. The artist is going to sell each coffee mug for $25 and each flower vase for $20.
   a. Write the Objective Function $25m + 20v = Income$

   b. How many of each item should the artist make in order to maximize their income?
      The artist should make 4 mugs & 6 vases
         to maximize their income at $220

	$25m + 20v$
$(0,0)$	0
$(8,0)$	200
$(4,6)$	220
$(0,10)$	200