LESSON 24

1. 5 **2.** $(2, 4)$ **3.** -2 **4.** C

5. 4 ft, 8 ft **6.** 7 **7.** Q2, Q3 **8.** 2

9. 5 **10.** 15

Worked-out solutions:

1. $3 = 4a - 1$ Plug $(4, 3)$ into eq1.
$4 = 4a$ Solve for a.
$a = 1$

$2(4) - 3 = b$ Plug $(4, 3)$ into eq2.
$b = 5$ Solve for b.

$ab = 1(5) = 5$ Find what is asked.

2. $3x + 2x = 10$ Plug eq1 into eq2.
$5x = 10$ Solve for x.
$x = 2$
$y = 2(2) = 4$ Use eq1 to find y:

3. $2x = 8$ Add eq1 to eq2.
$x = 4$ Solve for x.
$4 - 2y = 1$ Plug x into eq1:
$y = 3/2$ Solve for y:

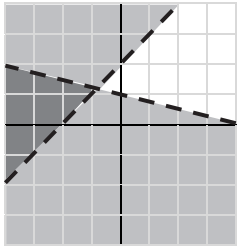
$x - 4y = 4 - 4(3/2)$ Find what is asked.
$= -2$

4. The slopes must be equal, so $b = 6$.
The y-intercepts must not be different, so $a \neq 1$.

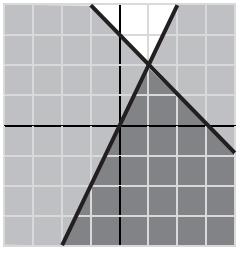
5. Let $x =$ width of the rectangle
Let $y =$ length of the rectangle
Length is twice width, so $y = 2x$.
Perimeter $= 2($width + length$) = 24$,
so $2(x + y) = 24$.
Solve the system, and you get $x = 4$ and $y = 8$.
The rectangle is 4 feet by 8 feet.

6. Let $x =$ number of 2-point baskets made
Let $y =$ number of 3-point baskets made
A total of 10 baskets, so $x + y = 10$.
Total points $= 23$, so $2x + 3y = 23$.
Solve the system, and you get $x = 7$ and $y = 3$.
Alexa made 7 2-point baskets.

7. The solution set is in Quadrants II and III.



8. The lines intersect at $(1, 2)$.



9. $a = 5$ makes the lines parallel and the system have no overlapping region.

10. $x =$ number of muffins
$y =$ number of cookies

At least 25 muffins and cookies, so $x + y \geq 25$.

At most \$60 to spend, so $3x + 2y \leq 60$.

The minimum y-value of the solution region is 15.