LESSON 4.3

NAME _____ DATE _____

Challenge: Skills and Applications

For use with pages 218–224

Write an equation of the line with the given *x*- and *y*-intercepts.

Example: *x*-intercept: 6

y-intercept: 4

Solution: Multiply $6 \cdot 4 = 24$.

The equation is $4x + 6y = 24$.

This can be simplified to $2x + 3y = 12$.

Check: $2(6) + 3(0) = 12$ yes

$2(0) + 3(4) = 12$ yes

1. *x*-intercept: 3, *y*-intercept: 5
2. *x*-intercept: 8, *y*-intercept: 4
3. *x*-intercept: 9, *y*-intercept: 6
4. *x*-intercept: 7, *y*-intercept: 5
5. ***Find a Pattern*** Write an equation of the line with *x*-intercept *a* and *y*-intercept *b*.
6. Explain why the first step of the example is to multiply the *x*- and *y*-intercepts. Why does this work?

In Exercises 7–11, use the following information.

Steve is making crafts to sell at a benefit. It takes him $\frac{3}{4}$ of an hour to make a trivet and $\frac{1}{2}$ hour to make a wooden spoon. He has 3 hours to work.

7. Write an equation to show the relationship between how many trivets and how many spoons Steve can make in 3 hours.
8. Graph the function from Exercise 7.
9. What is the *x*-intercept? What does it represent in this situation?
10. What is the *y*-intercept? What does it represent in this situation?
11. What are possible numbers of trivets and spoons Steve can make if he makes at least one of each?

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