

Lesson 4-5: Factor Expressions

1. Sample answer: The expression can be factored using the Distributive Property and the greatest common factor.
2. a. Sample answer: Susan didn't use any negative numbers so the expression won't expand to $-15b$. She also subtracted 3 from 6 instead of dividing by 3 to get 2.
b. $3(4a - 5b + 2)$
3. a. $36x + 12y + 24$
b. $12(3x + y + 2)$; He can make 12 identical kits.
c. 3 packs of x number of pencils, 1 pack of y number of crayons, and 2 erasers
4. Sample answer: $-12x + 24 - 18y = 6(-2x + 4 - 3y) = -6(2x - 4 + 3y)$
5. Sample answer: The GCF of 6 and 15 is 3. Using the Distributive Property, $3 \cdot 2x = 6x$ and $3 \cdot 5 = 15$. So, $6x + 15 = 3(2x + 5)$
6. $8a$; 5
 $2(8a + 5)$
7. $-3y$; -1
 $3(-3y - 1)$
8. $7(2x + 7)$
9. $4(3y - 4)$
10. Sample answers: $5x + 10$ and $5(x + 2)$
11. $6(3x + 4y)$
12. $240 - 400x = 80(3 - 5x)$
So, the possible dimensions are a width of 80 yards and length of $(3 - 5x)$ yards.
13. a. $5x(3 - 4y)$
b. My friend didn't completely factor the second term.
14. a. Identify the greatest common factor.
b. $2(6x + 9y + 13)$
15. Sample answers:
 $6x + 6$
 $6(x + 1)$
16. a. $-\frac{3}{4}m + 8m + m$
 $5.75t + 7.75t - t$
 $8xy - 6xy$
b. The terms within each expression do not have the same variables.
17. Yes; Sample answer: 3 and 5 do not have a common factor so the expression can not be factored.
18. A, C
19. $-2(x + 5)$ or $2(-x - 5)$