Lesson 4-7: Subtract Expressions

1. Sample answer: The Distributive Property can be used to expand expressions before subtracting. The Commutative Property and the Associative Property can be used to reorder the terms and group like terms.

2. Sample answer: You have to subtract the coefficients in the terms - 4x and 9x, which are - 4 and 9.

3. Yes; Sample explanation: -12 + 8r can be rewritten as 8r + (-12) by the Commutative Property. Subtracting -8r is the same as adding 8r, and subtracting 12 is the same as adding -12.

4. a. 14x + 16
   b. -8n - 17
   c. 3y
   d. 0.8

5. Original cost: 5p + 1.49
   Cost now: 2p + 6.49
   Difference in cost: 3p - 5

6. $\frac{19}{24}$m - $\frac{1}{3}$

7. - ; -

8. + ; +

9. - ; -
   - ; -
   6 ; -

10. 3x + 14

11. (35 + 5n) - (15 + 4n); n + 20

12. x + 10 cm^2;
    Sample explanation: The large triangle has an area of $\frac{1}{2}$(8 + 2)(x + 2), or 5x + 10 cm. The small triangle has an area of $\frac{1}{2}$(8x) = 4x. The shaded area is 5x + 10 - 4x = (x + 10) cm^2.

13. (7.65 + 5p) - (2.45 + 4p); p + 5.2

14. 0.04d + 20

15. 70.5x + 61.5 or 48x + 129

16. $\frac{1}{2}$p - $\frac{1}{4}$p - 4; He did not change the sign of the first term in the parentheses.

17. 10x - 11$\frac{5}{12}$

18. 3x + 14

19. a. $\frac{1}{4}$p - (1 - $\frac{1}{3}$p) =
    $\frac{1}{4}$p - 1 + $\frac{1}{3}$p =
    $\frac{1}{4}$p + $\frac{1}{3}$p - 1 =
    $\frac{3}{12}$p + $\frac{4}{12}$p - 1 =
    $\frac{7}{12}$p - 1

    b. Sample answer:
    $\frac{1}{4}$p - (1 - $\frac{1}{3}$p) =
    $\frac{1}{4}$p + (-1)(1 - $\frac{1}{3}$p) =
    $\frac{1}{4}$p + (-1)(1) + (-1)(- $\frac{1}{3}$p) =
    $\frac{1}{4}$p - 1 + $\frac{1}{3}$p

20. -0.55n - 0.05