Name _____ Class _____ Date _____

Practice 1-4

Mixed Exercises

1. A boutique prices merchandise by adding 80% to its cost. It later decreases by 25% the price of items that don't sell quickly.

a. Write a function $f(x)$ to represent the price after the 80% markup.

b. Write a function $g(x)$ to represent the price after the 25% markdown.

c. Use a composition function to find the price of an item that costs the boutique \$150, after both price adjustments.

d. Does the order in which the adjustments are applied make a difference? Explain.

Evaluate each composition. Let $f(x) = -3x + 2, g(x) = \frac{x}{5}$, $h(x) = -2x^2 + 9$, and $j(x) = 5 - x$.

2. $f(j(3))$

3. $f(4x)$

4. $5g(x)$

5. $f(x) - h(5)$

6. $j(h(-1))$

7. $-3h(x)$

8. $3h(x) + f(x)$

9. $j(x) - 5$

10. $f(1) \cdot f(1)$

11. $\frac{j(1)}{g(20)}$

12. $h(g(-5))$

13. $g(-5)$

14. $g(f(a))$

15. $g(f(-1))$

16. $h(g(5))$

17. $g\left(\frac{1}{2}\right)$

18. $j(m)$

19. $h(0.3)$

20. $f(x) + j(x)$

21. $f(x) - h(x)$

22. $f(2) + g(2)$

23. $\frac{f(0)}{h(0)}$

24. $5f(x)$

25. $5f(2)$

26. $f(g(-10))$

27. $g(f(1))$

28. $g(f(-5))$

29. $h\left(\frac{2}{3}\right)$

30. $j(1) \cdot j(2)$

31. $2f(1) - g(5)$

32. $g(x) - 12$

33. $f(g(-2))$

34. $3f(x) + 5g(x)$

35. $g(2) + f(x)$

36. $f(3) + g(x)$

37. $f(x) + g(-1)$

38. $\frac{h(1)}{j(-2)}$

39. $f(4) + g(x)$

40. $-8 - h(x)$

41. $-4g(x)$

42. $g(f(2))$

43. $g(f(x))$

44. $f(g(1))$

45. $f(g(0))$

46. $f(1)$

47. $h\left(-\frac{2}{3}\right)$

48. $j(f(3))$

49. $g(h(-3))$

50. $j(m^2)$

51. $3g(1)$

52. $5h(x)$

53. $5f(2)$

54. $g(f(0))$

55. $j(2n)$

56. $f(g(a))$

57. $g(f(1)) + 2$

58. $j(3)$

59. $f(g(-1))$

60. $h(g(x))$

61. $g(f(-2))$

62. $-2g(x)$

63. $g(x) - 2$

64. $f(x) - j(x)$

65. $g\left(\frac{3}{4}\right)$

66. $h(\frac{1}{2})$

67. $\frac{1}{2}h(x)$

68. $\frac{g(0)}{h(-4)}$

69. $j(x) - h(x)$

70. $j(-2)$

71. $g(1.5)$

72. $-2j(x)$

73. $h(0) + j(0)$

74. $f(g(100))$

75. $g(f(3))$

76. $g(f(-3))$

77. $f(h(2))$