DIRECTIONS: Solve the following equations for the variable x.

1. $\log_a x = \frac{3}{2}\log_a 9 + \log_a 2$

2. $\log_b(x^2 + 7) = \frac{2}{3}\log_b 64$

3. $\log_a(3x + 5) - \log_a(x - 5) = \log_a 8$

4. $\log_3(x + 2) + \log_3 6 = 3$

DIRECTIONS: Solve each equation. If needed, round to three decimal places.

5. $5^t = 10$

6. $5.6^x = 56$

7. $12^{2x} = 1000$

8. $3.5^{2t} = 60$

DIRECTIONS: Solve each equation *without* using a calculator or logarithms.

9. $3^x = \sqrt[5]{9}$

10. $125^x = 25\sqrt{5}$

DIRECTIONS: Solve each equation. If needed, round to three decimal places.

11. $x^{2/3} = 50$

12. $\sqrt[3]{x^4} = 60$

13. $\frac{\sqrt[5]{x}}{9} = 7$

14. $(3y - 1)^6 = 80$