9. Suppose x is a number such that $1 \leq x$ and $x \leq 6$. That is, x lies between one and six inclusive. If $f(x) = 100 - 8x$, then for what value of x is f(x) a minimum?

9. 6

10. Suppose x is a number such that $1 \leq x$ and $x \leq 6$. That is, x lies between one and six inclusive. If $g(x) = 4(x - 3)^2 + 2$, then for what value of x is g(x) a minimum?

10. 3

11. Suppose that $f(x) = 3x^2$ and $g(x) = (2x - 3)$.
Evaluate: $(f \circ g)(4) = f(g(4))$.

11. 75

12. Write out the expression you would evaluate to answer the following question. According to the US Bureau of Statistics, the population of the US was 249 million in 1990 and was growing at the rate 0.9% per year compunding continuously. What does that information suggest that US population was in the year 2000?

12. $249\,e^{0.009(10)} \times 10^6$

13. Write out the expression you would evaluate to answer the following question. A customer owes $2000 on a credit card account that charges interest at the rate of 18% per year compounded monthly. Assuming no further charges or payments are made, how much will the customer owe at the end of 6 months?

13. $2000\left(1 + \frac{.18}{12}\right)^{12(\frac{1}{2})}$

14. Write out the expression you would evaluate to answer the following question. A customer invests in an account that pays interest at the rate of 6% per year compounded monthly. Assuming no further deposits or withdrawals are made, how much must the customer deposit initially so the account will grow in value to $25,000 in 15 years?

$$25000 = P\left(1 + \frac{0.06}{12}\right)^{12 \cdot 15}$$

14. $\frac{25000}{\left(1 + \frac{0.06}{12}\right)^{12 \cdot 15}}$

15. Where does the graph of the function $h(x) = x^2 - 5x + 4$ cross the x-axis? That is, for what x does $h(x) = 0$?

$$\frac{5 \pm \sqrt{25 - 16}}{2} = \frac{5 \pm 3}{2}$$

15. 1 and 4