

Quiz #5: Take-Home

Directions: Please show all work since partial credit is given. Answers without the necessary work will receive no credit. The quiz is due no later than **Monday, March 8, at 12:02 pm**. Remember, have fun!

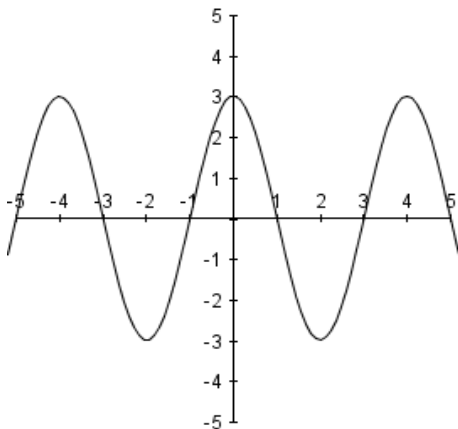
1. Solve the following equations. Give exact solutions.

a) $6^{2x-1} + 11 = 50$ _____

b) $\log(5x) + \log(x-1) = 2$ _____

2. Find an equation for the function $f(x)$ graphed below as a transformation of a **sine function**.

$f(x) =$ _____



3. The value V (in millions of \$) of a famous painting can be modeled exponentially. In 1990, the painting was sold for \$10 million, while in 2004 it was resold for \$65 million.

a) If t represents the number of years since 1990, find a model for $V(t)$, the value of the painting t years after 1990.

b) When will the painting be worth \$1 billion? _____