

3. [16 points] For each question below, give your answer(s) in **exact** form where appropriate. The different parts of this problem are not related to each other. **Circle** your final answer for each part.

a. [4 points] The point $(3, 7)$ is on the graph of $g(x)$. What point must be on the graph of $-3g(2x - 4)$?

b. [4 points] Find all solutions for x :

$$\ln(x^2 + e^2) = 3$$

c. [4 points] Find the **tripling** time of the exponential function $f(t) = 120e^{0.7t}$, where t is in hours.

d. [4 points] Suppose a farmer can typically grow $B(A)$ bushels of corn on A **acres** of farmland. She starts using a new fertilizer that **doubles** the number of bushels of corn she can grow. Write an expression involving the function B that expresses the number of bushels of corn she can grow on R square meters of farmland if she uses the new fertilizer. (Hint: There are 4046.86 square meters in one acre.)