

For all questions, create and solve an equation to determine the answer to the problem.

1. Lydia invested \$2250 into a GIC, and at the end of the 5 years she earned \$298.59 in interest. At what annual interest rate, compounded quarterly, did she make her initial investment?
2. A factory is to be built on a lot that measure 80m by 60m. A lawn of uniform width, equal to the area of the factory, must surround it. How wide is the strip of lawn, and what are the dimensions of the factory?

3. A rectangular box is 20cm high and twice as long as it is wide. If it has a surface area of 1600cm^2 , what is the volume?
4. The demand function for a new magazine is $p(x) = -6x + 40$ where $p(x)$ represents the selling price, in thousands of dollars, of the magazine and x is the number sold in thousands. The cost function is $C(x) = 4x + 48$. Calculate the maximum profit and the number of magazines sold that will produce the maximum profit.