

1. A manufacturer's total cost is  $C(x) = 10\sqrt{x} - 0.2x + 300$  thousands of dollars, where  $x$  is the number of units produced.

a. Find the total cost of producing 100 units.

b. Write down the expression that represents the cost of producing the 101st unit.

c. Use marginal analysis to estimate the cost of producing the 101st unit.

2. Estimate how much the function  $f(x) = \frac{x-2}{x+5} + 3$  will change as  $x$  changes from 5 to 4.5.