

Exercise 300

The demand D (in millions of barrels) for oil in an oil-rich country is given by the function $D(p) = 150 \cdot (2.7)^{-0.25p}$, where p is the price (in dollars) of a barrel of oil. Find the amount of oil demanded (to the nearest million barrels) when the price is between \$15 and \$20.

Solution

Plug in $p = 15$ and $p = 20$ and use a calculator.

$$D(15) = 150 \cdot 2.7^{-0.25(15)} \approx 3.61807$$

$$D(20) = 150 \cdot 2.7^{-0.25(20)} \approx 1.04538$$

Therefore, if the price is between \$15 and \$20, then the demand is between one and four million barrels.