Exercise 58

When hired at a new job selling electronics, you are given two pay options:

Option A: Base salary of \$10,000 a year with a commission of 9% of your sales

Option B: Base salary of \$20,000 a year with a commission of 4% of your sales

How much electronics would you need to sell for option A to produce a larger income?

Solution

Write a function for the pay of each option, using x for the amount of sales.

$$P_A(x) = 0.09x + 10\,000$$

$$P_B(x) = 0.04x + 20\,000$$

Now find where Option A becomes more profitable than Option B.

$$P_A(x) > P_B(x)$$

$$0.09x + 10\,000 > 0.04x + 20\,000$$

$$0.09x - 0.04x > -10\,000 + 20\,000$$

$$0.05x > 10\,000$$

$$x > \frac{10\,000}{0.05} = 200\,000$$

Therefore, if you can sell more than \$200,000 worth of electronics in a year, it's best to take Option A.