

Exercise 56

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

Option A: Base salary of \$14,000 a year with a commission of 10% of your sales

Option B: Base salary of \$19,000 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.

$$P_A(x) = 0.1x + 14\,000$$

$$P_B(x) = 0.04x + 19\,000$$

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

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

$$0.1x + 14\,000 > 0.04x + 19\,000$$

$$0.1x - 0.04x > -14\,000 + 19\,000$$

$$0.06x > 5\,000$$

$$x > \frac{5\,000}{0.06} \approx 8333.33$$

Therefore, if you can sell more than \$8,333.33 worth of electronics in a year, it's best to take Option A.