

Exercise 55

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

Option A: Base salary of \$17,000 a year with a commission of 12% of your sales

Option B: Base salary of \$20,000 a year with a commission of 5% of your sales

How much jewelry 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.

$$P_A(x) = 0.12x + 17\,000$$

$$P_B(x) = 0.05x + 20\,000$$

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

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

$$0.12x + 17\,000 > 0.05x + 20\,000$$

$$0.12x - 0.05x > -17\,000 + 20\,000$$

$$0.07x > 3000$$

$$x > 42\,857.14$$

Therefore, if you can sell more than \$42,857.14 worth of jewelry in a year, it's best to take Option A.