

## Exercise 57

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

Option A: Base salary of \$20,000 a year with a commission of 12% of your sales

Option B: Base salary of \$26,000 a year with a commission of 3% of your sales

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

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### Solution

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

$$P_A(x) = 0.12x + 20\,000$$

$$P_B(x) = 0.03x + 26\,000$$

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

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

$$0.12x + 20\,000 > 0.03x + 26\,000$$

$$0.12x - 0.03x > -20\,000 + 26\,000$$

$$0.09x > 6000$$

$$x > \frac{6000}{0.09} \approx 66\,666.67$$

Therefore, if you can sell more than \$66,666.67 worth of electronics in a year, it's best to take Option A.