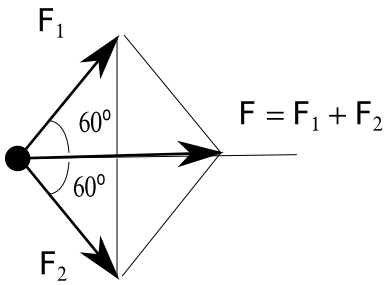
**Task.** A body of mass 200g is initially at rest, 2 forces of 1800 N each do simultaneously the body. If the forces make 120 degree with each other, how far does the body travel in 2 seconds?

**Solution.** First we should compute the sum of these forces. Choose coordinates as shown in the following figure:




Then the resulting force is directed along $x$-axis and has absolute value

$$F = 2 * 1800 * cos60^\circ = 2 * 1800 * \frac{1}{2} = 1800N.$$

By the second Newton's law the body will move with acceleration $a$ satisfying the following relation:

$$F = ma,$$

whence

$$a = \frac{F}{m} = \frac{1800}{200} = 9m/s^2.$$

Suppose that the body was at rest and he forces are applied at time $t = 0$. Then at time $t$ the body will pass the distance

$$d(t) = \frac{at^2}{2}.$$

Substituting values we get:

$$d(2) = \frac{at^2}{2} = \frac{9 * 2^2}{2} = 18\ m$$

**Answer.** 18 m.