

$$\text{Cost} = \text{Fixed Costs} + \text{Variable Costs}$$

EXAMPLE: An anticlot drug can be made for \$10 per unit. The total cost to produce 100 units is \$1500.

(a) Assuming that the cost function is linear, find its rule.

Solution: Since the cost function  $C(x)$  is linear, its rule is of the form  $C(x) = mx + b$ . We are given that  $m$  (the cost per item) is 10, so the rule is

$$C(x) = 10x + b$$

To find  $b$ , use the fact that it costs \$1500 to produce 100 units, which means that

$$C(100) = 1500$$

$$10(100) + b = 1500$$

$$1000 + b = 1500$$

$$b = 1500 - 1000 = 500$$

So the rule of the cost function is  $C(x) = 10x + 500$ .

(b) What are the fixed costs?

Solution: The fixed costs are

$$C(0) = 10(0) + 500 = \$500$$