

F-IF Average Cost

Task

John makes DVDs of his friend's shows. He has realized that, because of his fixed costs, his average cost per DVD depends on the number of DVDs he produces. The cost of producing x DVDs is given by

$$C(x) = 2500 + 1.25x.$$

a. John wants to figure out how much to charge his friend for the DVDs. He's not trying to make any money on the venture, but he wants to cover his costs. Suppose John made 100 DVDs. What is the cost of producing this many DVDs? How much is this *per DVD*?

b. John is hoping to make many more than 100 DVDs for his friends. Complete the table showing his costs at different levels of production.

# of DVDs	0	10	100	1,000	10,000	100,000	1,000,000
Total Cost							
Cost per DVD							

c. Explain why the average cost per DVD levels off.

d. Find an equation for the average cost per DVD of producing x DVDs.

e. Find the domain of the average cost function.

f. Using the data points from your table above, sketch the graph of the average cost function. How does the graph reflect that the average cost levels off?



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