

Problem (Break-even quantity)

Evergreen Fertilizer Company produces fertilizer. The company's fixed monthly cost is \$25,000, and its variable cost per pound of fertilizer is \$0.15. Evergreen sells the fertilizer for \$0.40 per pound.

a) Determine the monthly break-even volume for the company.

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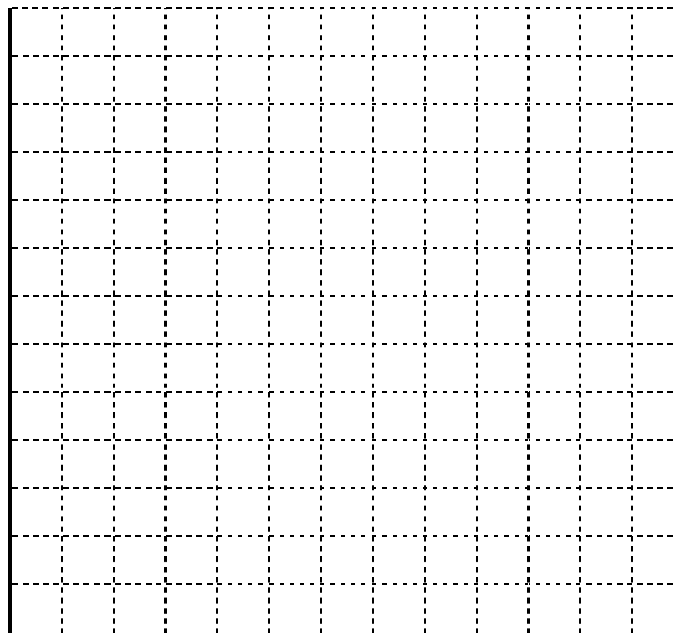
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b) Graphically illustrate the break-even volume for the Evergreen Fertilizer Company



c) If the maximum operating capacity of Evergreen Fertilizer Company is 120,000 pounds of fertilizer per month, determine the break-even volume as a percentage of capacity.

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d) If Evergreen Fertilizer Company changes the price of its fertilizer from \$0.40 per pound to \$0.60 per pound, what effect will the change have on the break-even volume?

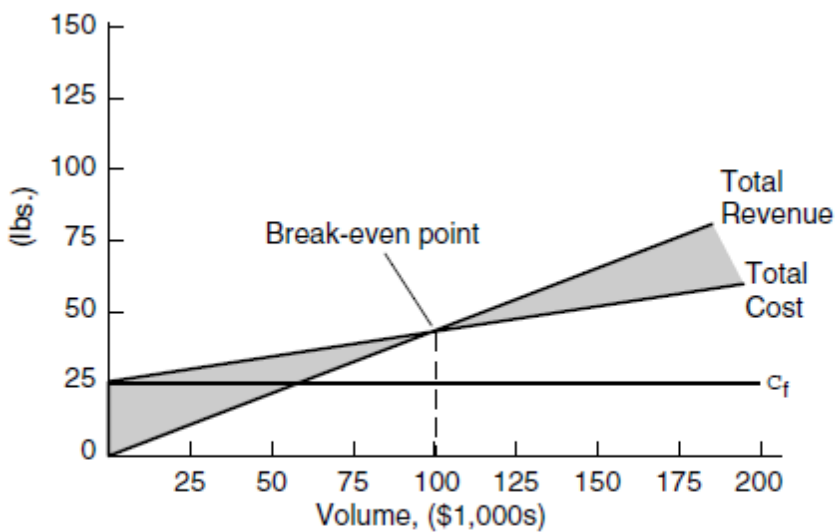
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Problem 1

a)

$$c_f = \$25,000, p = \$.40, c_v = \$.15, v = \frac{c_f}{p - c_v} = \frac{25,000}{.40 - .15} = 100,000 \text{ lb per month}$$

b)



c)

$$\text{Break-even volume as percentage of capacity} = \frac{v}{k} = \frac{100,000}{120,000} = .833 = 83.3\%$$

d)

$$v = \frac{c_f}{p - c_v} = \frac{25,000}{.60 - .15} = 55,555.55 \text{ lb per month; it reduces the break-even volume from 100,000 lb per month to 55,555.55 lb.}$$