

No:

Date:

## Question #6

Solution:

$$C_F = \$1658 \times 10 = \$16580$$

$$C_v = \$23/\text{user}$$

$$P = \$65/\text{user}$$

$$\text{Total users} = 4300$$

$$\begin{aligned}\text{Break even point} &= TR = TC \\ &= P \times D = C_F + C_v \times D \\ &= 65D = 16580 + 23D \\ &= (65 - 23)D = 16580\end{aligned}$$

$$\Rightarrow D = \frac{16580}{42}$$

$$D_B = 394.76$$

$$\begin{aligned}\text{Revenue at break even point} &\Rightarrow P \times D_B \\ &= 65 \times 394.76 \\ &= \$25659.4\end{aligned}$$

$$\begin{aligned}\text{Reduced Fixed cost} &= 16580 - \frac{8.5 \times 16580}{100} \\ &= 16580 - 1409.3 \\ &= \$15170.7\end{aligned}$$

Now

$$\begin{aligned}\text{Break even point} &\Rightarrow TR = TC \\ &= P \times D = C_F + C_v \times D \\ &= 65D = 15170.7 + 23D\end{aligned}$$

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$$= (65 - 23)D = 15170.7$$

$$= D = \frac{15170.7}{42}$$

$$D_B = 361.207$$

Revenue at this point =  $P \times D_B$

$$= 65 \times 361.207$$

$$= \$23478.455$$

Now

$$\% \text{ Reduction} = \frac{25659.4 - 23478.455}{65 \times 4300} \times 100$$

~~$$= \frac{42180.945}{234500} \times 100$$~~

~~$$= 18.01\%$$~~

~~$$= 15.09\%$$~~

$$= 0.780\%$$