

# [Calculation of contribution margin per unit and machine-hour for md widgets essay...](https://assignbuster.com/calculation-of-contribution-margin-per-unit-machine-hour-for-md-widgets-essay-sample/)

MD Widgets manufactures three different product lines, Model X, Model Y, and Model Z. Considerable market demand exists for all models. The following per unit data apply:

Model X Model YModel Z   
Selling price $80 $90 $100   
Direct materials $30 30 30   
Direct labor ($10/hour) $15 15 20   
Variable support costs $5 10 10   
($5 per machine-hour)   
Fixed support costs 20 20 20

a)For each model, compute the contribution margin per unit. b)For each model, compute the contribution margin per machine-hour. c)If there is excess capacity, which model is the most profitable to produce? Why? d)If there is a machine breakdown, which model is the most profitable to produce? Why? e)How can MD encourage her sales people to promote the more profitable model?

Solution:   
MODEL XMODEL YMODEL Z   
Selling price $ 80 $ 90 $ 100 Direct materials $ 30 $ 30 $ 30 Direct labor ($10 per hour) $ 15 $ 15 $ 20 Variable support costs ($5 per machine-hour) $ 5 $ 10 $ 10 Total variable cost $ 50 $ 55 $ 60 Fixed support costs $ 20 $ 20 $ 20

Contribution margin per unit = Selling price per unit – Variable cost per unit $ 30$ 35 $ 40 Contribution margin per machine hour   
$ 30 $ 18 $ 20

a) The contribution margin per unit for :   
Model X = $ 30   
Model Y = $ 35   
Model Z = $ 40

b) The contribution margin per machine-hour for:   
Model X = $ 30   
Model Y = $ 35   
Model Z = $ 40

c) If there is excess capacity, which model is the most profitable to produce? Why? Model Z is more profitable since its contribution margin is greater than the other two models which will result in excess profit. d) If there is a machine breakdown, which model is the most profitable to produce? Why? Model X is more profitable at times of machine break-down since the machine hour required per unit is 1, whereas for the other two models 2 machine hours are required e) How can MD encourage her sales people to promote the more profitable model? By introducing a sales commission depending on the most profitable model, MD can encourage her sales people to promote and sell the most profitable model

References:

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