Full Costing and Variable Costing 1

$p_A := 98$

$dmc_A := 30$

$dlc_A := 10$

$spc_A := 0$

$t1_A := 6min$

$t2_A := 4min$

$t3_A := 4min$

$t4_A := 10min$

$xp_A := 2100$

$xs_A := 2100$

$p_B := 107$

$dmc_B := 32$

$dlc_B := 8$

$spc_B := 2$

$t1_B := 4min$

$t2_B := 2min$

$t3_B := 3min$

$t4_B := 8min$

$xp_B := 4000$

$xs_B := 3960$

$IMCfix := 3820$

$POH1fix := 28600$

$POH2fix := 11480$

$POH3fix := 27540$

$POH4fix := 10600$

$AC := 76326$

$SC := 114489$

$DMC := dmc_A \cdot xp_A + dmc_B \cdot xp_B$

$DMC = 191000$

$IMCvar := 0.03 \cdot DMC$

$IMCvar = 5730$

$poh1pm := 0.5min^{-1}$

$poh2pm := 0.3min^{-1}$

Full Costing and Variable Costing 1

$poh3pm := 0.45min^{-1}$

$poh4pm := 0.3min^{-1}$

$POH1var := poh1pm \cdot t1_A \cdot xp_A + poh1pm \cdot t1_B \cdot xp_B$

$POH1var = 14300$

$POH2var := poh2pm \cdot t2_A \cdot xp_A + poh2pm \cdot t2_B \cdot xp_B$

$POH2var = 4920$

$POH3var := poh3pm \cdot t3_A \cdot xp_A + poh3pm \cdot t3_B \cdot xp_B$

$POH3var = 9180$

$POH4var := poh4pm \cdot t4_A \cdot xp_A + poh4pm \cdot t4_B \cdot xp_B$

$POH4var = 15900$

Cost per unit and result per unit (full costing)

$imcfull_A := \frac{IMCfix + IMCvar}{DMC} \cdot dmc_A$

$imcfull_B := \frac{IMCfix + IMCvar}{DMC} \cdot dmc_B$

$imcfull_A = 1.5$

$imcfull_B = 1.6$

$dlc_A = 10$

$dlc_B = 8$

$poh1full_A := \frac{POH1fix + POH1var}{t1_A \cdot xp_A + t1_B \cdot xp_B} \cdot t1_A$

$poh1full_B := \frac{POH1fix + POH1var}{t1_A \cdot xp_A + t1_B \cdot xp_B} \cdot t1_B$

$poh1full_A = 9$

$poh1full_B = 6$

$poh2full_A := \frac{POH2fix + POH2var}{t2_A \cdot xp_A + t2_B \cdot xp_B} \cdot t2_A$

$poh2full_B := \frac{POH2fix + POH2var}{t2_A \cdot xp_A + t2_B \cdot xp_B} \cdot t2_B$

$poh2full_A = 4$

$poh2full_B = 2$

$poh3full_A := \frac{POH3fix + POH3var}{t3_A \cdot xp_A + t3_B \cdot xp_B} \cdot t3_A$

$poh3full_B := \frac{POH3fix + POH3var}{t3_A \cdot xp_A + t3_B \cdot xp_B} \cdot t3_B$

$poh3full_A = 7.2$

$poh3full_B = 5.4$

$poh4full_A := \frac{POH4fix + POH4var}{t4_A \cdot xp_A + t4_B \cdot xp_B} \cdot t4_A$

$poh4full_B := \frac{POH4fix + POH4var}{t4_A \cdot xp_A + t4_B \cdot xp_B} \cdot t4_B$

$poh4full_A = 5$

$poh4full_B = 4$

$pohfull_A := poh1full_A + poh2full_A + poh3full_A + poh4full_A$

$pohfull_B := poh1full_B + poh2full_B + poh3full_B + poh4full_B$

$pohfull_A = 25.2$

$pohfull_B = 17.4$

$spc_A = 0$

$spc_B = 2$

$mcfull_A := dmc_A + imcfull_A + dlc_A + pohfull_A + spc_A$

$mcfull_B := dmc_B + imcfull_B + dlc_B + pohfull_B + spc_B$

$mcfull_A = 66.7$

$mcfull_B = 61$

$MCOGSfull_A := mcfull_A \cdot xs_A$

$MCOGSfull_B := mcfull_B \cdot xs_B$

$MCOGSfull_A = 140070$

$MCOGSfull_B = 241560$

$MCOGSfull := MCOGSfull_A + MCOGSfull_B$

$MCOGSfull = 381630$

$ac_A := \frac{AC}{MCOGSfull} \cdot mcfull_A$

$ac_B := \frac{AC}{MCOGSfull} \cdot mcfull_B$

$ac_A = 13.34$

$ac_B = 12.2$

$sc_A := \frac{SC}{MCOGSfull} \cdot mcfull_A$

$sc_B := \frac{SC}{MCOGSfull} \cdot mcfull_B$

$sc_A = 20.01$

$sc_B = 18.3$

$tcfull_A := mcfull_A + ac_A + sc_A$

$tcfull_B := mcfull_B + ac_B + sc_B$

$tcfull_A = 100.05$

$tcfull_B = 91.5$

$r_A := p_A - tcfull_A$

$r_B := p_B - tcfull_B$

$r_A = -2.05$

$r_B = 15.5$

Cost-of-sales results accounting (full costing)

$S_A := p_A \cdot xs_A$

$S_B := p_B \cdot xs_B$

$S_A = 205800$

$S_B = 423720$

$S := S_A + S_B$

$S = 629520$

$TCOGSfull_A := tcfull_A \cdot xs_A$ $TCOGSfull_B := tcfull_B \cdot xs_B$

$TCOGSfull_A = 210105$ $TCOGSfull_B = 362340$

$TCOGSfull := TCOGSfull_A + TCOGSfull_B$

$TCOGSfull = 572445$

$Rfull_A := S_A - TCOGSfull_A$ $Rfull_B := S_B - TCOGSfull_B$

$Rfull_A = -4305$ $Rfull_B = 61380$

$Rfull := Rfull_A + Rfull_B$

$Rfull = 57075$

Total cost results accounting (full costing)

$S_A := p_A \cdot xs_A$ $S_B := p_B \cdot xs_B$

$S_A = 205800$ $S_B = 423720$

$S := S_A + S_B$

$S = 629520$

$ICfull_A := mcfull_A \cdot (xp_A - xs_A)$ $ICfull_B := mcfull_B \cdot (xp_B - xs_B)$

$ICfull_A = 0$ $ICfull_B = 2440$

$ICfull := ICfull_A + ICfull_B$

$ICfull = 2440$

$TPfull_A := S_A + ICfull_A$ $TPfull_B := S_B + ICfull_B$

$TPfull_A = 205800$ $TPfull_B = 426160$

$TPfull := TPfull_A + TPfull_B$

$TPfull = 631960$

$TCOPfull_A := TCOGSfull_A + ICfull_A$

$TCOPfull_A = 210105$

$TCOPfull_B := TCOGSfull_B + ICfull_B$

$TCOPfull_B = 364780$

$TCOPfull := TCOPfull_A + TCOPfull_B$

$TCOPfull = 574885$

$Rfull_A := TPfull_A - TCOPfull_A$

$Rfull_A = -4305$

$Rfull_B := TPfull_B - TCOPfull_B$

$Rfull_B = 61380$

$Rfull := Rfull_A + Rfull_B$

$Rfull = 57075$

Cost per unit and result per unit (variable costing)

$dmc_A = 30$

$dmc_B = 32$

$imcvar_A := \frac{IMCvar}{DMC} \cdot dmc_A$

$imcvar_B := \frac{IMCvar}{DMC} \cdot dmc_B$

$imcvar_A = 0.9$

$imcvar_B = 0.96$

$dlc_A = 10$

$dlc_B = 8$

$poh1var_A := \frac{POH1var}{t1_A \cdot xp_A + t1_B \cdot xp_B} \cdot t1_A$

$poh1var_B := \frac{POH1var}{t1_A \cdot xp_A + t1_B \cdot xp_B} \cdot t1_B$

$poh1var_A = 3$

$poh1var_B = 2$

$poh2var_A := \frac{POH2var}{t2_A \cdot xp_A + t2_B \cdot xp_B} \cdot t2_A$

$poh2var_B := \frac{POH2var}{t2_A \cdot xp_A + t2_B \cdot xp_B} \cdot t2_B$

$poh2var_A = 1.2$

$poh2var_B = 0.6$

$poh3var_A := \frac{POH3var}{t3_A \cdot xp_A + t3_B \cdot xp_B} \cdot t3_A$

$poh3var_B := \frac{POH3var}{t3_A \cdot xp_A + t3_B \cdot xp_B} \cdot t3_B$

$poh3var_A = 1.8$

$poh3var_B = 1.35$

$poh4var_A := \frac{POH4var}{t4_A \cdot xp_A + t4_B \cdot xp_B} \cdot t4_A$

$poh4var_B := \frac{POH4var}{t4_A \cdot xp_A + t4_B \cdot xp_B} \cdot t4_B$

$poh4var_A = 3$

$poh4var_B = 2.4$

$pohvar_A := poh1var_A + poh2var_A + poh3var_A + poh4var_A$

$pohvar_B := poh1var_B + poh2var_B + poh3var_B + poh4var_B$

$pohvar_A = 9$ $pohvar_B = 6.35$

$spc_A = 0$ $spc_B = 2$

$mcvar_A := dmc_A + imcvar_A + dlc_A + pohvar_A + spc_A$

$mcvar_B := dmc_B + imcvar_B + dlc_B + pohvar_B + spc_B$

$mcvar_A = 49.9$ $mcvar_B = 49.31$

$tcvar_A := mcvar_A$ $tcvar_B := mcvar_B$

$cm_A := p_A - tcvar_A$ $cm_B := p_B - tcvar_B$

$cm_A = 48.1$ $cm_B = 57.69$

Cost-of-sales results accounting (variable costing)

$CM_A := cm_A \cdot xs_A$ $CM_B := cm_B \cdot xs_B$

$CM_A = 101010$ $CM_B = 228452.4$

$CM := CM_A + CM_B$

$CM = 329462.4$

$Cfix := IMCfix + POH1fix + POH2fix + POH3fix + POH4fix + AC + SC$

$Cfix = 272855$

$Rvar := CM - Cfix$

$Rvar = 56607.4$

Total cost results accounting (variable costing)

$S_A := p_A \cdot xs_A$ $S_B := p_B \cdot xs_B$

$S_A = 205800$ $S_B = 423720$

$S := S_A + S_B$

$S = 629520$

$ICvar_A := mcvar_A \cdot (xp_A - xs_A)$ $ICvar_B := mcvar_B \cdot (xp_B - xs_B)$

$ICvar_A = 0$ $ICvar_B = 1972.4$

$ICvar := ICvar_A + ICvar_B$

$ICvar = 1972.4$

$TPvar_A := S_A + ICvar_A$ $TPvar_B := S_B + ICvar_B$

$TPvar_A = 205800$ $TPvar_B = 425692.4$

$TPvar := TPvar_A + TPvar_B$

$TPvar = 631492.4$

$TCOGSvar_A := tcvar_A \cdot xs_A$ $TCOGSvar_B := tcvar_B \cdot xs_B$

$TCOGSvar_A = 104790$ $TCOGSvar_B = 195267.6$

$TCOGSvar := TCOGSvar_A + TCOGSvar_B$

$TCOGSvar = 300057.6$

$TCOPvar_A := TCOGSvar_A + ICvar_A$ $TCOPvar_B := TCOGSvar_B + ICvar_B$

$TCOPvar_A = 104790$ $TCOPvar_B = 197240$

$TCOPvar := TCOPvar_A + TCOPvar_B$

$TCOPvar = 302030$

$Rvar := TPvar - TCOPvar - Cfix$

$Rvar = 56607.4$

Legend

Subscripts A, B for products

p	= Selling price
dmc	= Direct cost of materials per unit
dlc	= Direct cost of labour per unit
spc	= Special direct production cost per unit
t1	= Production time in stage 1 per unit
t2	= Production time in stage 2 per unit
t3	= Production time in stage 3 per unit

Full Costing and Variable Costing 1

t4	= Production time in stage 4 per unit
xp	= Quantity of goods produced
xs	= Quantity of goods sold
IMCfix	= Fixed indirect cost of materials
POH1fix	= Fixed production overhead stage 1
POH2fix	= Fixed production overhead stage 2
POH3fix	= Fixed production overhead stage 3
POH4fix	= Fixed production overhead stage 4
AC	= Administration cost (fixed)
SC	= Sales cost (fixed)
DMC	= Direct cost of materials
IMCvar	= Variable indirect cost of materials
poh1pm	= Variable production overhead stage 1 per min
poh2pm	= Variable production overhead stage 2 per min
poh3pm	= Variable production overhead stage 3 per min
poh4pm	= Variable production overhead stage 4 per min
POH1var	= Variable production overhead stage 1
POH2var	= Variable production overhead stage 2
POH3var	= Variable production overhead stage 3
POH4var	= Variable production overhead stage 4
imcfull	= Fixed + variable indirect cost of materials per unit
poh1full	= Fixed + variable production overhead stage 1 per unit
poh2full	= Fixed + variable production overhead stage 2 per unit
poh3full	= Fixed + variable production overhead stage 3 per unit
poh4full	= Fixed + variable production overhead stage 4 per unit
pohfull	= Fixed + variable production overhead per unit
mcfull	= Fixed + variable manufacturing cost per unit
MCOGSfull	= Fixed + variable manufacturing cost of goods sold
ac	= Administration cost per unit
sc	= Sales cost per unit
tcfull	= Total fixed + variable cost per unit
r	= Result per unit
S	= Sales (value), turnover
TCOGSfull	= Total cost of goods sold in full costing
Rfull	= Result in full costing
ICfull	= Inventory change in full costing
TPfull	= Total performance in full costing
TCOPfull	= Total cost of goods produced in full costing
imcvar	= Indirect cost of materials per unit
poh1var	= Variable production overhead stage 1 per unit
poh2var	= Variable production overhead stage 2 per unit
poh3var	= Variable production overhead stage 3 per unit
poh4var	= Variable production overhead stage 4 per unit
mcvar	= Variable manufacturing cost per unit
tcvar	= Total variable cost per unit
cm	= Contribution margin per unit
CM	= Contribution margin
Cfix	= Fixed cost
Rvar	= Result in variable costing
ICvar	= Inventory change in variable costing
TPvar	= Total performance in variable costing
TCOGSvar	= Total cost of goods sold in variable costing
TCOPvar	= Total cost of goods produced in variable costing