Full Costing Based on Production Time

$p_A := 98$

$dmc_A := 30$

$dlc_A := 10$

$spc_A := 0$

$t1_A := 6min$

$t2_A := 4min$

$t3_A := 4min$

$t4_A := 10min$

$xp_A := 2100$

$xs_A := 2100$

$p_B := 107$

$dmc_B := 32$

$dlc_B := 8$

$spc_B := 2$

$t1_B := 4min$

$t2_B := 2min$

$t3_B := 3min$

$t4_B := 8min$

$xp_B := 4000$

$xs_B := 3960$

$IMCf := 3820$

$POH1f := 28600$

$POH2f := 11480$

$POH3f := 27540$

$POH4f := 10600$

$ACf := 76326$

$SCf := 114489$

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

$DMC = 191000$

$IMCv := 0.03 \cdot DMC$

$IMCv = 5730$

$poh1v := 0.5min^{-1}$

Full Costing Based on Production Time

$poh2v := 0.3min^{-1}$

$poh3v := 0.45min^{-1}$

$poh4v := 0.3min^{-1}$

$POH1v := poh1v \cdot t1_A \cdot xp_A + poh1v \cdot t1_B \cdot xp_B$

$POH1v = 14300$

$POH2v := poh2v \cdot t2_A \cdot xp_A + poh2v \cdot t2_B \cdot xp_B$

$POH2v = 4920$

$POH3v := poh3v \cdot t3_A \cdot xp_A + poh3v \cdot t3_B \cdot xp_B$

$POH3v = 9180$

$POH4v := poh4v \cdot t4_A \cdot xp_A + poh4v \cdot t4_B \cdot xp_B$

$POH4v = 15900$

$imc_A := \frac{IMCf + IMCv}{DMC} \cdot dmc_A$

$imc_A = 1.5$

$imc_B := \frac{IMCf + IMCv}{DMC} \cdot dmc_B$

$imc_B = 1.6$

$poh1_A := \frac{POH1f + POH1v}{t1_A \cdot xp_A + t1_B \cdot xp_B} \cdot t1_A$

$poh1_A = 9$

$poh1_B := \frac{POH1f + POH1v}{t1_A \cdot xp_A + t1_B \cdot xp_B} \cdot t1_B$

$poh1_B = 6$

$poh2_A := \frac{POH2f + POH2v}{t2_A \cdot xp_A + t2_B \cdot xp_B} \cdot t2_A$

$poh2_A = 4$

$poh2_B := \frac{POH2f + POH2v}{t2_A \cdot xp_A + t2_B \cdot xp_B} \cdot t2_B$

$poh2_B = 2$

$poh3_A := \frac{POH3f + POH3v}{t3_A \cdot xp_A + t3_B \cdot xp_B} \cdot t3_A$

$poh3_A = 7.2$

$poh3_B := \frac{POH3f + POH3v}{t3_A \cdot xp_A + t3_B \cdot xp_B} \cdot t3_B$

$poh3_B = 5.4$

Full Costing Based on Production Time

$$poh4_A := \frac{POH4f + POH4v}{t4_A \cdot xp_A + t4_B \cdot xp_B} \cdot t4_A \qquad poh4_B := \frac{POH4f + POH4v}{t4_A \cdot xp_A + t4_B \cdot xp_B} \cdot t4_B$$

$poh4_A = 5$ $poh4_B = 4$

$mc_A := dmc_A + imc_A + dlc_A + poh1_A + poh2_A + poh3_A + poh4_A + spc_A$

$mc_B := dmc_B + imc_B + dlc_B + poh1_B + poh2_B + poh3_B + poh4_B + spc_B$

$mc_A = 66.7$ $mc_B = 61$

$MCOGS_A := mc_A \cdot xs_A$ $MCOGS_B := mc_B \cdot xs_B$

$MCOGS_A = 140070$ $MCOGS_B = 241560$

$MCOGS := MCOGS_A + MCOGS_B$

$MCOGS = 381630$

$ACv := 0 \cdot MCOGS$

$SCv := 0 \cdot MCOGS$

$$ac_A := \frac{ACf + ACv}{MCOGS} \cdot mc_A \qquad ac_B := \frac{ACf + ACv}{MCOGS} \cdot mc_B$$

$ac_A = 13.34$ $ac_B = 12.2$

$$sc_A := \frac{SCf + SCv}{MCOGS} \cdot mc_A \qquad sc_B := \frac{SCf + SCv}{MCOGS} \cdot mc_B$$

$sc_A = 20.01$ $sc_B = 18.3$

$tc_A := mc_A + ac_A + sc_A$ $tc_B := mc_B + ac_B + sc_B$

$tc_A = 100.05$ $tc_B = 91.5$

$r_A := p_A - tc_A$ $r_B := p_B - tc_B$

$r_A = -2.05$ $r_B = 15.5$

Cost-of-sales results accounting

$R_A := r_A \cdot xs_A$ $R_B := r_B \cdot xs_B$

$R_A = -4305$ $R_B = 61380$

$R := R_A + R_B$

$R = 57075$

Total cost results accounting

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

$S_A = 205800$ $S_B = 423720$

$S := S_A + S_B$

$S = 629520$

$IC_A := mc_A \cdot (xp_A - xs_A)$ $IC_B := mc_B \cdot (xp_B - xs_B)$

$IC_A = 0$ $IC_B = 2440$

$IC := IC_A + IC_B$

$IC = 2440$

$TP_A := S_A + IC_A$ $TP_B := S_B + IC_B$

$TP_A = 205800$ $TP_B = 426160$

$TP := TP_A + TP_B$

$TP = 631960$

$MCOP_A := mc_A \cdot xp_A$ $MCOP_B := mc_B \cdot xp_B$

$MCOP_A = 140070$ $MCOP_B = 244000$

$MCOP := MCOP_A + MCOP_B$

$MCOP = 384070$

$AC_A := ac_A \cdot xs_A$ $AC_B := ac_B \cdot xs_B$

$AC_A = 28014$ $AC_B = 48312$

Full Costing Based on Production Time

$$AC := AC_A + AC_B$$

$$AC = 76326$$

$$SC_A := sc_A \cdot xs_A \qquad SC_B := sc_B \cdot xs_B$$

$$SC_A = 42021 \qquad SC_B = 72468$$

$$SC := SC_A + SC_B$$

$$SC = 114489$$

$$TCOP_A := MCOP_A + AC_A + SC_A \qquad TCOP_B := MCOP_B + AC_B + SC_B$$

$$TCOP_A = 210105 \qquad TCOP_B = 364780$$

$$TCOP := TCOP_A + TCOP_B$$

$$TCOP = 574885$$

$$R_A := TP_A - TCOP_A \qquad R_B := TP_B - TCOP_B$$

$$R_A = -4305 \qquad R_B = 61380$$

$$R := R_A + R_B$$

$$R = 57075$$

Legend:

Index 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 Direct Production Cost Centre 1 per unit
t2 = Production time in Direct Production Cost Centre 2 per unit
t3 = Production time in Direct Production Cost Centre 3 per unit
t4 = Production time in Direct Production Cost Centre 4 per unit
xp = Quantity of goods produced
xs = Quantity of goods sold
IMCf = Fixed indirect cost of materials
POH1f = Fixed production overhead 1 (in Direct Production Cost Centre 1)
POH2f = Fixed production overhead 2 (in Direct Production Cost Centre 2)
POH3f = Fixed production overhead 3 (in Direct Production Cost Centre 3)
POH4f = Fixed production overhead 4 (in Direct Production Cost Centre 4)
ACf = Fixed administration cost
SCf = Fixed sales cost
DMC = Direct cost of material
IMCv = Variable indirect cost of material
poh1v = Variable production overhead 1 (in Direct Production Cost Centre 1) per minute
poh2v = Variable production overhead 2 (in Direct Production Cost Centre 2) per minute
poh3v = Variable production overhead 3 (in Direct Production Cost Centre 3) per minute
poh4v = Variable production overhead 4 (in Direct Production Cost Centre 4) per minute
POH1v = Variable production overhead 1 (in Direct Production Cost Centre 1)
POH2v = Variable production overhead 2 (in Direct Production Cost Centre 2)
POH3v = Variable production overhead 3 (in Direct Production Cost Centre 3)
POH4v = Variable production overhead 4 (in Direct Production Cost Centre 4)
imc = Indirect cost of materials per unit
poh1 = Production overhead 1 per unit
poh2 = Production overhead 2 per unit
poh3 = Production overhead 3 per unit
poh4 = Production overhead 4 per unit
mc = Manufacturing cost per unit
MCOGS = Manufacturing cost of goods sold
ACv = Variable administration cost
SCv = Variable sales cost
ac = Administration cost per unit
sc = Sales cost per unit
tc = Total cost per unit
r = Result per unit
R = Result
S = Sales (value), turnover
IC = Change in inventory of finished goods
TP = Total performance
MCOP = Manufacturing cost of goods produced
AC = Administration cost
SC = Sales cost
TCOP = Total cost of goods produced