Question 1 [Bright P/L] – Suggested Solutions

(1)

Cash Flow from Operations – indirect method – **$000**		
Net profit	20	
Add back depreciation	165	185
Adjustments		
Debtors	56	
Stock	(80)	
Creditors	160	136
Cash flow from operating activities		*321*

Cash Flow Statement – **$000**		
Operating activities		
Cash flow from operating activities		*321*
Investing activities		
Purchase of equipment	(600)	
Cash flow from investing activities		*(600)*
Financing activities		
Additional borrowing – loan	280	
Equity contributions	60	
Cash flow from financing activities		*340*
Net change in cash flow		*61*
Add cash at beginning		184
Cash at end		**245**

(2)

Analysis

- The decrease in debtors could potentially imply that Bright P/L has become more efficient in collecting payment from customers who make credit purchases.
- The increase in stock could potentially imply that Bright P/L has either become less efficient in managing its inventory, or that it expects an increase in sales in the upcoming financial period.
- Whilst the increase in trade creditors could potentially imply that Bright P/L has been successful in negotiating longer credit terms with its supplier, this possibility is probably unlikely due to the fact that most of the cash flows generated from operating activities have been applied towards the purchase of equipment. This in turn might have put pressure on cash flows, leading to a delay in payments to creditors.
- Only $340,000 of the funding of the purchase of equipment [$600,000] has been generated from long-term sources [Loan and Equity contributions], and the remaining amount (which is a bit under half of the total) has been generated from short-term sources [Operating cash flows]: such a mix of funding is not ideal: fixed assets should be ideally financed via long-term sources of funds. Short-term funding in this case would have been better used towards paying-off creditors.

Question 2 [Matthew Manufacturing] – Suggested Solutions

(1)

Pool rates
Set-ups: $240,000 / 300 production runs = $800 per set-up
Machinery: $1,748,250 / 185,000 machine hours = $9.45 per machine hour
Receiving: $2,100,000 / 1,400 orders = $1,500 per order
Design: $1,960,000 / 10,000 design hours = $196 per design hour
Material handling: $900,000 / 900 moves = $1,000 per move

Tigers
Set-ups: 100 production runs x $800 per set-up = $80,000
Machinery: 125,000 machine hours x $9.45 per machine hour = $1,181,250
Receiving: 400 orders x $1,500 per order = $600,000
Design: 5,000 design hours x $196 per design hour = $980,000
Material handling: 500 moves x $1,000 per move = $500,000
Total: $3,341,250
Allocated overheads: $3,341,250 / 100,000 production units = $33.41 per unit

Saints
Set-ups: 200 production runs x $800 per set-up = $160,000
Machinery: 60,000 machine hours x $9.45 per machine hour = $567,000
Receiving: 1,000 orders x $1,500 per order = $1,500,000
Design: 5,000 design hours x $196 per design hour = $980,000
Material handling: 400 moves x $1,000 per move = $400,000
Total: $3,607,000
Allocated overheads: $3,607,000 / 20,000 production units = $180.35 per unit

Unit Costs	**Tiger**	**Saint**
Direct materials & labor	$16.14	$20.00
Overhead	$33.41	$180.35
Total	*$49.55*	*$200.35*
Selling price	$111.84	$68.16
Contribution margin	$62.29	($132.19)

Compare *$49.55* with $79.89. Compare *$200.35* with $48.69.

(2)

Actions
- Activity management – reduce overheads caused by Saints
- Change selling prices
- Examine fixed and variable costs in each pool

Question 3 [X Ltd] – Suggested Solutions

(1)

$	A	B	C	Total
Sales	2,500,000	1,500,000	3,200,000	7,200,000
Variable costs				
Manufacturing & operating	(1,600,000)[a]	(1,130,000)[b]	(1,900,000)[c]	(4,630,000)
Contribution margin	900,000	370,000	1,300,000	2,570,000
Direct fixed costs				
Manufacturing & operating	(840,000)*	(500,000)*	(680,000)*	(2,020,000)
Segment margin	60,000	(130,000)	620,000	550,000
Common fixed costs				
Factory rent				(300,000)
Central lighting				(100,000)
Salary				(150,000)
Display rent				(50,000)
Loss				**(50,000)**

a: $1,250,000 + $350,000; b: $1,000,000 + $130,000; c: $1,700,000 + $200,000

* Direct fixed costs

$300,000 + $100,000 + $150,000 + $50,000 = $600,000

	A	B	C
Allocated percentage of $600,000	35%	20%	45%
	$210,000	$120,000	$270,000

A: $850,000 + $200,000 – $210,000 = $840,000
B: $550,000 + $70,000 – $120,000 = $500,000
C: $800,000 + $150,000 – $270,000 = $680,000

(2)

Could possibly discontinue **B** because of its negative segment margin.

Additional information to be sought:

- Is it necessary to pay rent for 'display', or could the floor area of **B** (assuming **B** is discontinued) be used for that purpose?
- What would the segment margins be if the allocation of direct fixed costs were based on some criteria other than sales: such as, floor space or machine hours?

Question 4 [Comtech] – Suggested Solutions

(1)
Breakeven in units = annual fixed costs / contribution margin per unit
Breakeven in units = annual fixed costs / (selling price per unit – variable costs per unit)
Breakeven in units = $936,000 / ($50 – $39.60)
Breakeven in units = $936,000 / $10.40
Breakeven in units = 90,000 units

(2)
Breakeven in sales dollars = Breakeven in units x Selling price per unit
Breakeven in sales dollars = 90,000 units x $50
Breakeven in sales dollars = $4,500,000

(3)
Margin of safety in units = Forecast sales in units – Breakeven sales in units
Margin of safety in units = 120,000 units – 90,000 units
Margin of safety in units = 30,000 units

(4 a)
Sales in units = {profit before tax + fixed costs} / contribution margin per unit
Sales in units = {$130,000 + $936,000} / $10.40
Sales in units = $1,066,000 / $10.40
Sales in units = 102,500 units

(4 b)
Sales in units = {profit before tax + fixed costs} / contribution margin per unit
Sales in units = {[profit after tax / (1 – tax rate)] + fixed costs} / contribution margin per unit
Sales in units = {[$140,000 / (1 – 0.30)] + $936,000} / $10.40
Sales in units = {[$140,000 / 0.70] + $936,000} / $10.40
Sales in units = {$200,000 + $936,000} / $10.40
Sales in units = $1,136,000 / $10.40
Sales in units = 109,231 units

(5)
Direct labour increases by $1 from $10 to $11 [i.e., $10 x (1 + 0.10)]
Therefore, total variable costs increase by $1 from $39.60 to $40.60
Thus, the contribution margin decreases by $1 from $10.40 to $9.40

Breakeven in units = annual fixed costs / contribution margin per unit
Breakeven in units = $936,000 / $9.40
Breakeven in units = 99,575 units

(6)
Direct labour increases by $1 from $10 to $11 [i.e., $10 x (1 + 0.10)]
Therefore, total variable costs increase by $1 from $39.60 to $40.60
Thus, the contribution margin decreases by $1 from $10.40 to $9.40

Hence, in order to maintain the contribution margin $10.40, the selling price must increase by $1 from $50 to $51 in order to offset the $1 increase in total variable costs.

Question 5 [Part 380] – Suggested Solutions

(1)

Note: fixed overhead is ignored, because it is not relevant.

Relevant costs to make part 380 = direct material + direct labour + variable overhead

Relevant costs to make part 380 = $8 + $1 + $4 = $13

Relevant costs to buy part 380 = purchase price

Relevant costs to buy part 380 = $16

Therefore, this company should continue to make part 380, because it would be cheaper than buying it from a supplier [$13 compared to $16].

(2)

Note: fixed overhead is ignored, because it is not relevant.

Relevant costs to make part 380 = direct material + direct labour + variable overhead

Relevant costs to make part 380 = $8 + $1 + $4 = $13

Relevant costs to buy part 380 = purchase price

Relevant costs to buy part 380 = $16

Contribution margin from making new product = selling price – total variable costs

Contribution margin from making new product = $10 – $2

Contribution margin from making new product = $8

Effective cost to buy part 380 = Relevant costs to buy part 380 – Contribution margin from making new product

Effective cost to buy part 380 = $16 – $8

Effective cost to buy part 380 = $8

Therefore, this company should buy part 380 from a supplier, and use its productive capacity to make a new product, because this would be cheaper than making part 380 [$8 compared to $13].