

MULTIPLE CHOICE (40%)

1.	C $\$150,000 / 5,000 = \30.00
2.	A $(100 + 5,000 - 4,700) \times 30 = \$12,000$
3.	D
4.	B
5.	D
6.	B
7.	C
8.	C
9.	B
10.	C
11.	B
12.	A
13.	B
14.	B
15.	D
16.	B
17.	D Predetermined overhead rate = Estimated total manufacturing overhead cost ÷ Estimated total amount of the allocation base = $\$118,800 \div 22,000$ machine-hours = $\$5.40$ per machine-hour
18.	B Net change in cash and cash equivalents = Net cash provided by (used in) operating activities + Net cash provided by (used in) investing activities + Net cash provided by (used in) financing activities $-\$19,000 =$ Net cash provided by (used in) operating activities - $\$9,000 + \$16,000$ Net cash provided by (used in) operating activities = $-\$19,000 + \$9,000 - \$16,000 = -\$26,000$
19.	C Return on common stockholders' equity = (Net income - Preferred dividends) ÷ Average common stockholders' equity $12.5\% = (\text{Net income} - \$16,000) \div (\$2,000,000 - \$200,000)$ $\text{Net income} - \$16,000 = 12.5\% \times \$1,800,000$ $\text{Net income} = 12.5\% \times \$1,800,000 + \$16,000$ $= \$225,000 + \$16,000 = \$241,000$
20.	A Variable cost per guest for supplies = $\$148.20 \div 57$ guests = $\$2.60$ per guest Variable cost per guest for laundry = $\$216.60 \div 57$ guests = $\$3.80$ per guest

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Activity level	<u>53 Guests</u>
Variable overhead costs:	
Supplies (\$2.60 per guest * 53 guests)	\$ 137.80
Laundry (\$3.80 per guest * 53 guests)	201.40
Fixed overhead costs:	
Utilities	170.00
Salaries and wages	4,310.00
Depreciation	<u>2,340.00</u>
Total overhead cost	<u>\$ 7,159.20</u>

Question 1 Performance Measure (Product Profitability Analysis)

1. Margin of safety in units = Expected sales in units – breakeven sales in units

$$= 8,000 \quad - 2,500$$

$$= 5,500 \text{ units}$$

Margin of safety in dollars = Expected sales in dollars – Breakeven sales in dollars

$$= (8,000 \times \$10) \quad - (2,500 \times \$10)$$

$$= \$55,000$$

$$\text{Margin of safety as percentage} = \frac{\text{Margin of safety in units}}{\text{Expected sales in units}}$$

$$= \frac{5,500 \text{ pairs}}{8,000 \text{ pairs}}$$

$$= 68.75\%$$

Fleet Foot’s margin of safety is quite high. Sales have to fall by more than 5,500 units (or \$55,000) before fleet incurs a loss. Fleet will continue to earn a profit unless sales drop by more than 68.75%.

2. At its current level of volume, Fleet’s operating income is as follows:

Contribution margin (8,000 pairs x \$4 / pair)	\$32,000
Less: fixed expenses	<u>(10,000)</u>
Operating income	\$22,000

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Fleet’s operating leverage factor at this level of sales is computed as follows:

$$\text{Operating leverage factor} = \frac{\text{Contribution margin } \$32,000}{\text{Operating income } \$22,000} = 1.45 \text{ (rounded)}$$

If sales volume declines by 25%, operating income will decline by 36.25% (Fleet’s operating leverage factor of 1.45 multiplied by 25%).

3. If Fleet drops its sales price to \$9 per pair, its contribution margin per pair declines to \$3 (sales price of \$9 – variable cost of \$6). Each sale contributes less toward covering fixed costs. Fleet’s new breakeven point increases to 3,334 pairs of socks (\$10,000 fixed cost ÷ \$3 unit contribution margin).

4.

	Hiking Socks	Dress Socks	Total
Sales price per unit	\$9.00	\$7.00	
Deduct: Variable expense per unit	(6.00)	(2.75)	
Contribution margin per unit	\$3.00	\$4.25	
Sales mix	X 1	X 4	5
Contribution margin	\$3.00	\$17.00	\$20.00
Weighted-average contribution margin per unit (\$20/5)			\$ 4.00

$$\begin{aligned} \text{Sales in total units} &= \frac{\text{Fixed expenses} + \text{Operating income}}{\text{Weighted-average contribution margin per unit}} \\ &= \frac{\$10,000 + \$0}{\$4} = 2,500 \text{ pairs of socks} \end{aligned}$$

Breakeven sales of dress socks (2,500× 4/5) = 2,000 pairs of socks

Breakeven sales of hiking socks (2,500× 1/5) = 500 pairs of hiking socks

By expanding its product line to include higher-margin dress socks, Fleet foot is able to decrease its breakeven point back to its original level (2,500 pairs). However, to achieve this breakeven point, Fleet Foot must sell the planned ratio of four pairs of dress socks to every one pair of hiking socks.

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Question 2 Investment Decision (Capital Budgeting, Net Present Value)

Solution:

After-tax cash benefit:

Cash benefit year	(a)	Depreciation	Taxable income	Income tax (b)	Net after-tax cash Inflow
1	\$25,000	\$12,500	\$12,500	\$5,000	\$20,000
2	25,000	12,500	12,500	5,000	20,000
3	25,000	12,500	12,500	5,000	20,000
4	25,000	12,500	12,500	5,000	20,000
1	\$45,000	\$15,000	\$30,000	\$12,000	\$33,000
2	19,000	15,000	4,000	1,600	17,400
3	25,000	15,000	10,000	4,000	21,000
4	25,000	15,000	10,000	4,000	21,000

Net Present Value

Year	Cash (Outflow) Inflow	Present Value of \$1 8 Percent	Net present value of cash flow
Machine 1			
0	\$(50,000)	1,000	\$(50,000)
1—4	20,000	3.312	66,240
Net present value			\$ 16,240
Machine 2			
0	\$(60,000)	1,000	\$(60,000)
1	33,000	0.926	30,558
2	17,400	0.857	14,912
3	21,000	0.794	16,674
4	21,000	0.735	15,435
Net present value			\$17,579

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Question 3 Corporate Finance (Risk and Return)

SOLUTION

$$r = \sum r_i p_i$$

$$\sigma = \sqrt{\sum (r_i - \bar{r})^2 p_i}$$

It is convenient to set up the following table:

r_i (%)	p_i	$r_i p_i$ (%)	$(r_i - \bar{r})$ (%)	$(r_i - \bar{r})^2$	$(r_i - \bar{r})^2 p_i$ (%)
-20	0.1	-2	-32	1,024	102.4
5	0.2	1	-7	49	9.8
10	0.3	3	-2	4	1.2
25	0.4	10	13	169	67.6
		$\bar{r} = 12$			$\sigma^2 = 181$

Since $\sigma^2 = 181$, $\sigma = \sqrt{181} = 13.45\%$.

Question 4 (Cash Budgeting)

- موازنة المقبوضات

بيان	إجمالي	كانون الثاني	شباط	آذار	ذمم
مبيعات كانون الثاني	40000	8000	32000	0	0
مبيعات شباط	45000	0	9000	36000	0
مبيعات آذار	50000	0	0	10000	40000
	135000	8000	41000	46000	40000

-2 موازنة المدفوعات

بيان	إجمالي	كانون الثاني	شباط	آذار	ذمم
مشتريات كانون الثاني	34000	0	0	34000	0
مشتريات شباط	42000	0	0	0	42000
مشتريات آذار	39000	0	0	0	39000
الرواتب	41000	13000	14000	14000	0
الاعباء الاجتماعية	8300	0	2700	2800	2800
شراء اصول ثابتة	8000	0	0	8000	0
	172300	13000	16700	58800	83800

-3 موازنة نقدية

بيان	كانون الثاني	شباط	آذار
مقبوضات	8000	41000	46000
مدفوعات	13000	16700	58800
اول مدة	50000	45000	69300
آخر مدة	45000	69300	56500