BA Study Session 2 – Possible Solutions

Summer 2026

German American Chambers of Commerce
Deutsch-Amerikanische Handelskammern

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Scenario:

You own a small landscaping and houseplant business, called Planted LP. Alongside plants grown onsite at your nursery and in your greenhouse, you sell various indoor and outdoor planters, raised garden beds, handcrafted shelving units for greenhouses, potting soils, and other products used for outdoor gardening and raising houseplants. Your primary business is wholesaling products to local shops and landscaping consultations and services. Your clients and customers are located throughout the Midwest.

Task 5

Once your new administrative assistant is trained, you will have more time on your hands to focus on your nurseries and greenhouses. Since you plan to expand your growing operations, you will need to invest in a new sprinkler system. Create a double-entry journal entry using the information found on the attached invoice for the purchase and installation of the Leon's 1090 High Volume Sprinkler System. Use the correct account codes from the provided list.

Watershed Systems LLC
19-14 Elm Street Zion, IL

Watershed Systems LLC - 19-14 Elm Street - Zion, IL 60099

Planted LP
555 Maplewood Avenue,
Winnetka, IL 60043

Received: 2/17/26

Helen Barton
Phone: 617 555 2348
Email: info@watershed.com
Date: 2/3/26

Bill 555

Customer #	Shipment on	Packing Slip Nr.
1342	2/3/26	2076

	Total Price (USD)
Leon's 1090 High Volume Sprinkler System	3,466.00
Sales Tax (16%)	554.56
Installation	1,000.00
Billing Amount	**5,020.56**

Pay the full amount within 30 days of the billing date or within 10 days for a 3% discount.

Account Code	Account Name
02011	Rent
02021	Utilities
04401	Packaging/shipping materials
23301	The Cozy Collective Inc., Chicago, IL
23302	Wild Interiors, Hartland, WI
23203	Mae Mae's Treasure Trove, Saint Paul, MN
23399	Other Clients & Customers
2700	Company Bank Account
42301	Clay Country LLC, Milwaukee, WI
42302	Eclectic Living Inc, Chicago, IL
42303	Watershed Systems LLC, Zion, IL
42304	Farmer's Hand Co., St. Lous, MO
43399	Other Vendors & Partners

Credit	Debit
2700 (-5,020.56)	42303 (+5,020.56)

Task 6

This particular type of sprinkler system has an estimated useful life of 15-20 years. The system was paid for within the rebate timeframe mentioned on the invoice. Taking the conservative estimate, calculate the pro rata temporis depreciation value of the sprinklers for the remainder of the year using straight line depreciation.

3,466.00 x 97% = 3,362.02 [unit sale price - 3% rebate]

3,362.02 + 554.56 = 3,916.58 [rebate price + sales tax on full price = net purchase price]

3,916.58 ÷ 15 = 261.11 [net purchase price ÷ useful life estimate = cost per year]

261.11 x $\frac{10}{12}$ = $217.59 per month depreciation [cost per year x $\frac{months\ remaining\ in\ the\ year}{12}$]

Task 7

You have been communicating with a furniture manufacturer in Wisconsin that is willing to design and produce custom shelving units to sell at your retail location. They have so far drafted 3 shelf designs and have provided the cost breakdown as well as respective manufacturer's suggested retail prices (MSRP) for you to review.

7A. While you think any of the designs would perform well with your customers, for now you only want to add one of the shelving units to your selection. Use the data provided by the manufacturer to choose the shelving unit with the greatest gross margin per unit sold.

	Design A	Design B	Design C
Material Costs per Unit	$121.00	$156.00	$226.00
Labor Costs per Unit	$153.00	$203.00	$261.00
Wholesale Price per Unit	$328.80	$430.80	$584.40
MSRP per Unit	$351.99	$460.99	$625.99

Commented [JD1]: 120%

Commented [JD2]: 107%

$\frac{MSRP - Wholesale\ Price}{MSRP}$ x 100 = Gross Margin

Design A: $\frac{351.99 - 328.80}{351.99}$ x 100 = 6.59%

Design B: $\frac{460.99 - 430.80}{460.99}$ x 100 = 6.55%

Design C: $\frac{625.99 - 584.40}{625.99}$ x 100 = 6.65%

7B. If your retail space comes with annual fixed costs of $157,000.00 how many Design A shelves at the MSRP would you have to sell to reach the break-even point?

157,000.00 ÷ 23.19 = 6,770.15955… **6,771 Design A shelves to reach break-even point.**

7C. You choose to add Design A to your retail selection. If you want to ensure a minimum profit margin of 20% and you have a loyalty program that provides a discount of 3% on all purchases, what is the sale price you need to put on the shelving unit to ensure you meet your minimum profit margin goal?

Calculation Procedure	Calculation Steps in Dollars
Purchase price	328.80
+ 20% profit margin	**65.76**
= Base sale price	**394.56**
+ 3% loyalty discount	**12.20**
= Actual sale price	**406.76**

328.80 x 20% = 65.76 [purchase price x 20% = profit margin in $]

328.80 + 65.76 = $394.56 [purchase price + profit margin = base sale price]

394.56 ÷ (1 – 3%) = $406.76 [base sale price ÷ (1 - 3%) = actual sale price]

406.76 x 3% = $12.20 **-or-** 406.76 – 394.56 = $12.20 (actual sale price x 3% = loyalty discount **-or-** actual sale price – base sale price = loyalty discount)