

## Salem Telephone

### 1. Which costs are variable with respect to Revenue Hours?

Solution: There are only two variable costs 1) Power and 2) Operations: Hourly Personnel.

Explanation:

- For a cost to be variable with respect to Revenue Hours, the total cost must vary exactly (proportionately) with Revenue Hours; another way to state this is that the cost per Revenue Hour must stay the same at any volume of Revenue Hours.
- The only costs for which this is true are Power and Operations Hourly Personnel
- Total Revenue hours for January, February, and March are given in Exhibit 1 of the case.
- Costs come from Exhibit 2 of the case.
- If you take the total expense for each line item (e.g., rent) for January, February, and March, and divide it by the number of revenue hours for the respective month, Power and Operations: Hourly Personnel are the only two items which give the same result for each month.

### 2. For each variable cost, what is the variable cost per revenue hour?

Solution:

- Power: \$4.70 per revenue hour
- Operations: Hourly Personnel: \$24.00 per revenue hour

Explanation:

	January	February	March
1. Revenue Hours	329	316	361
2. Power cost	1,546	1,485	1,697
3. Power cost per revenue hour (Row 2/Row 1)	\$4.70	\$4.70	\$4.70
4. Ops: Hourly Pers.	7,896	7,584	8,664
5. Ops: Hrly Pers per revenue hour (Row 4/Row 1)	\$24.00	\$24.00	\$24.00

### 3. What is the total variable cost per hour?

Solution: \$28.70

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Explanation: Power + Operations: Hourly Personnel = \$4.70 + 24.00 = \$28.70

**4. What is the total non-variable cost?**

Solution: \$213,020 NOTE: Anything in the range \$211,800 through \$213,120 is acceptable)

Explanation:

- Ten of the 12 non-variable costs in Exhibit 2 of the case are exactly the same for each of the three months; these costs remain the same when calculating the total fixed (or non-variable) costs.
- The exceptions are Sales Promotion and Corporate Services, which change from month to month. While these are not variable costs, because they are not the same per revenue hour for each month, they are clearly managed costs, where managers make decisions about how much they will spend each month. Thus, for our calculations, we must choose a value for each of these two costs. There are many reasonable approaches to selecting a value. For example,
  1. Use the most recent month's value
  2. Use an average of the past three months
  3. Use a round figure representative of recent values
 For purposes of this example, we used method 3.

Nonvariable Cost	Solution	Explanation
Space Costs		
Rent	8,000	
Custodial Services	<u>1,240</u>	
	9,240	
Equipment Costs		
Computer Leases	95,000	
Maintenance	5,400	
Depreciation:		
Computer Equipment	25,500	
Office Equipment & Fixtures	<u>680</u>	
	126,580	
Wages and Salaries		
Operations: Salaried Staff	21,600	
Systems Development & Mtce.	12,000	
Administration	9,000	
Sales	<u>11,200</u>	
	53,800	
Sales Promotion	8,000	Answers from 7,000 to 8,200 are acceptable.
Corporate Services	<u>15,400</u>	Answers from 15,000 to 15,500 are acceptable.
<b>Total Nonvariable Cost</b>	<b>213,020</b>	

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**5. Prepare a contribution Margin Income Statement with IntraCompany usage at 205 Revenue hours, and Commercial usage at the March level (= 138 Revenue Hours). Round to nearest dollar.**

<b>Revenue</b>	<b>Solution</b>	<b>Explanation</b>
Intracompany Sales	82,000	$205 \times 400 = 82,000$
Commercial Sales	110,400	$138 \times 800 = 110,400$
<b>Total Revenue</b>	<b>192,400</b>	
<b>Variable Costs</b>		
Power	1,612	$(205 + 138) \times \$4.70 = \$1,612$
Operations: hourly personnel	8,232	$(205 + 138) \times \$24.00 = \$8,232$
<b>Subtotal Variable Costs</b>	<b>9,844</b>	
Contribution Margin	182,556	$\$192,400 - \$9,844 = \$182,556$
<b>Total Nonvariable Costs</b>	<b>213,020</b>	Nonvariable costs from prior question
Net income (loss)	<u>-30,464</u>	$182,556 - 213,020 = -30,464$