NAME: _____ **DATE:** _____

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Financial Planning Sheet #1

Record the finance information for the adobe insulated power plant.

Table 1: Financial Information

Insulation Material	Insulation Thickness	Number of Houses Powered	Start-up Expenses	Yearly Operating Expense	Gross Yearly Revenue	Net Yearly Revenue
Adobe	5 cm		$	$	$	$

Record the total expenses and total revenue from the *Solville Financial Statement* spreadsheet. Create ordered pairs for the total expenses and total revenue data.

Table 2: Break-even Data

Years	Total Cumulative Expenses	Expenses Ordered Pair (yr , $)	Total Cumulative Revenue (x1 mil)	Revenue Ordered Pair (yr , $)
0		(,)		(,)
1	444,625,000	(1 , 444,625,000)	92,000,000	(1 , 92,000,000)
2		(,)		(,)
3		(,)		(,)

Using two points from each line (expenses and revenue), write the equation for each line. Show your work below.

	Total Expenses Slope	Total Revenue Slope
Slope (m) for:	_____	_____
Y-intercept (b) for:	Total Expenses Y-intercept	Total Revenue Y-intercept
	_____	_____
Slope Intercept Equation for:	Total Expenses	Total Revenue
	_____	_____

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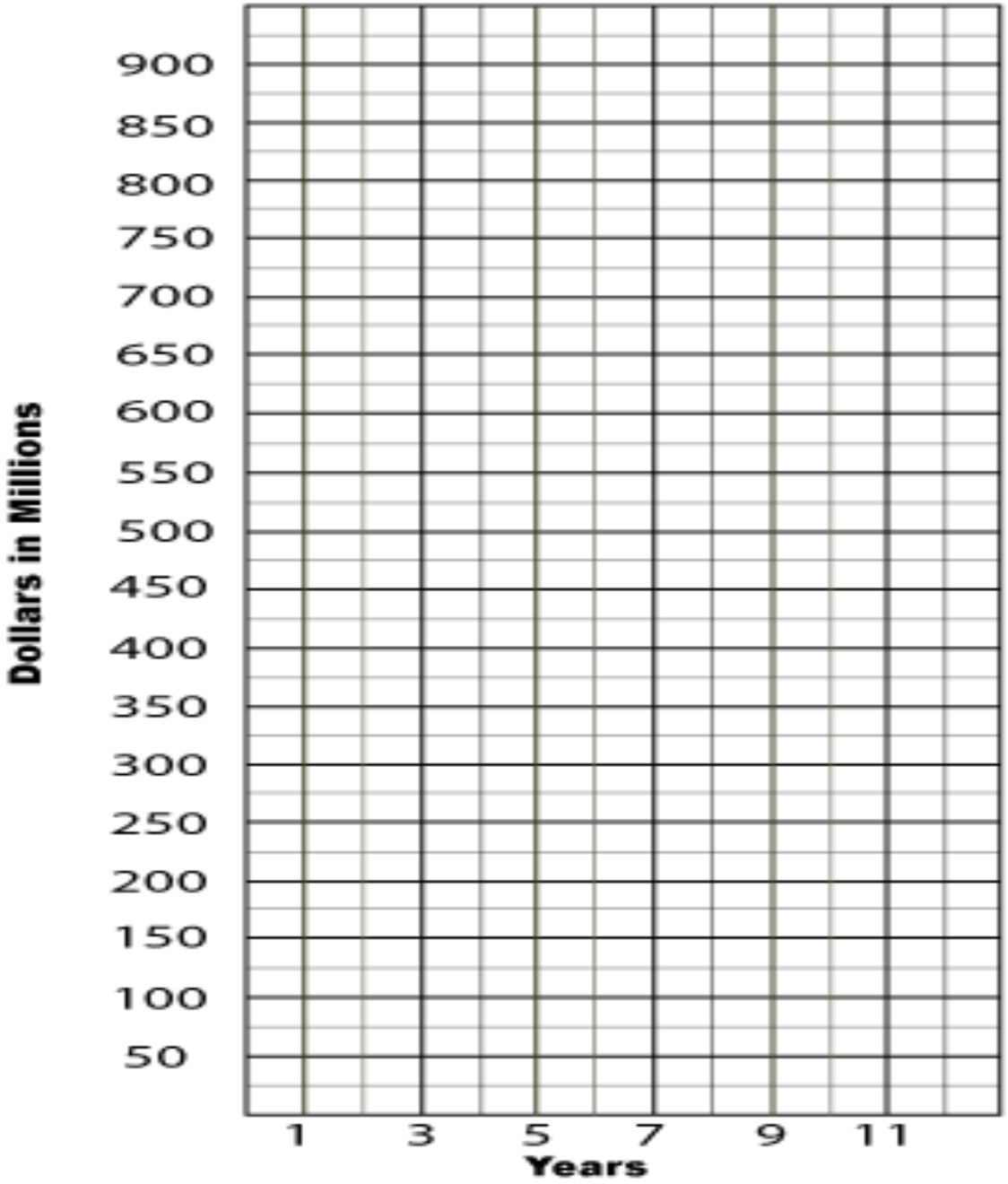
Break-even Graph

Graph the lines using the data from table 2 from *Financial Planning Sheet #1*. Use red colored pencil for total expenses and black colored pencil for total revenue.



What year did your data indicate that you reached the break-even point from the graph? _____

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Break-even System of Equation

Write the equation for total expenses and total revenue for the Adobe-insulated power plant. These were completed on *Financial Planning Sheet #1*. Then, find the break-even point, written as (years , amount) by solving the system of equations in the space below.

Equation of Total Expenses

_____

Equation of Total Revenue

_____

Solve using System of Equations below.

Break-even point (_____ , _____)

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Financial Planning Sheet #2

Record the financial information for the power plant designs that provide power to all homes in Solville.

Table 1: Financial Outlook Table

Insulation Material	Insulation Thickness	Number of Houses Powered	Start-up Expenses	Gross Yearly Revenue	Yearly Operating Cost	Net Yearly Revenue
	cm		$	$	$	$
	cm		$	$	$	$
	cm		$	$	$	$
	cm		$	$	$	$
	cm		$	$	$	$
	cm		$	$	$	$
	cm		$	$	$	$

Your assigned Material: _____ Thickness: _____ cm

Total Expense

Slope(m)= _____

y-intercept(b)= _____

Equation of Line: _____

Total Revenue

Slope(m)= _____

y-intercept(b)= _____

Equation of Line: _____

Calculate the break-even point using systems of equations. Show your work below.

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Record total expense and total revenue equations and the break-even points for all of the plant designs. The data will be provided by other groups in your class.

Table 2: Financial Equations for All Power Plant Designs

Insulation Material	Insulation Thickness	Expense Equation	Revenue Equation	Break-even Point
	cm			
	cm			
	cm			
	cm			
	cm			
	cm			
	cm			

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Decision Matrix

Complete the decision matrix using the requirements in the student edition in sections 3.2 and 3.3.

Power Plant Design Matrix			
Insulation Material and Thickness	Start-up Expense (Bank loan, in $ million)	Time to Break-even (years)	Yearly Profit after Break-even (Net Yearly Revenue)
Fiberglass 5 cm			
Aerogel 3 cm			
Aerogel 4 cm			
Aerogel 5 cm			
Vacuum Panel 3 cm			
Vacuum Panel 4 cm			
Vacuum Panel 5 cm			

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Insulation Recommendation

Write a letter to the Mayor and City Council of Solville to recommend which insulation you would have the city use for the power plant. Include evidence for why you chose the insulation materials that you did.