

Name: _____

Eagle ID#: _____

ASSIGNMENT 4
TRANSPORTATION COSTING / PRICING ASSIGNMENT
Part 1

Objective:

To show the relationship between distance and transportation costs.

Information:

Using the trucking company information below, fill in the table.

Fixed Cost: Monthly truck payment = \$700

Variable Cost: Driver cost = \$.80 per mile
Gasoline cost = \$.10 per mile
Repair cost = \$.10 per mile

Truck Travel Distance (Miles)	Total Variable Cost	Total Fixed Cost	Total Cost	Cost Per Mile
100				
200				
300				
400				
500				
600				

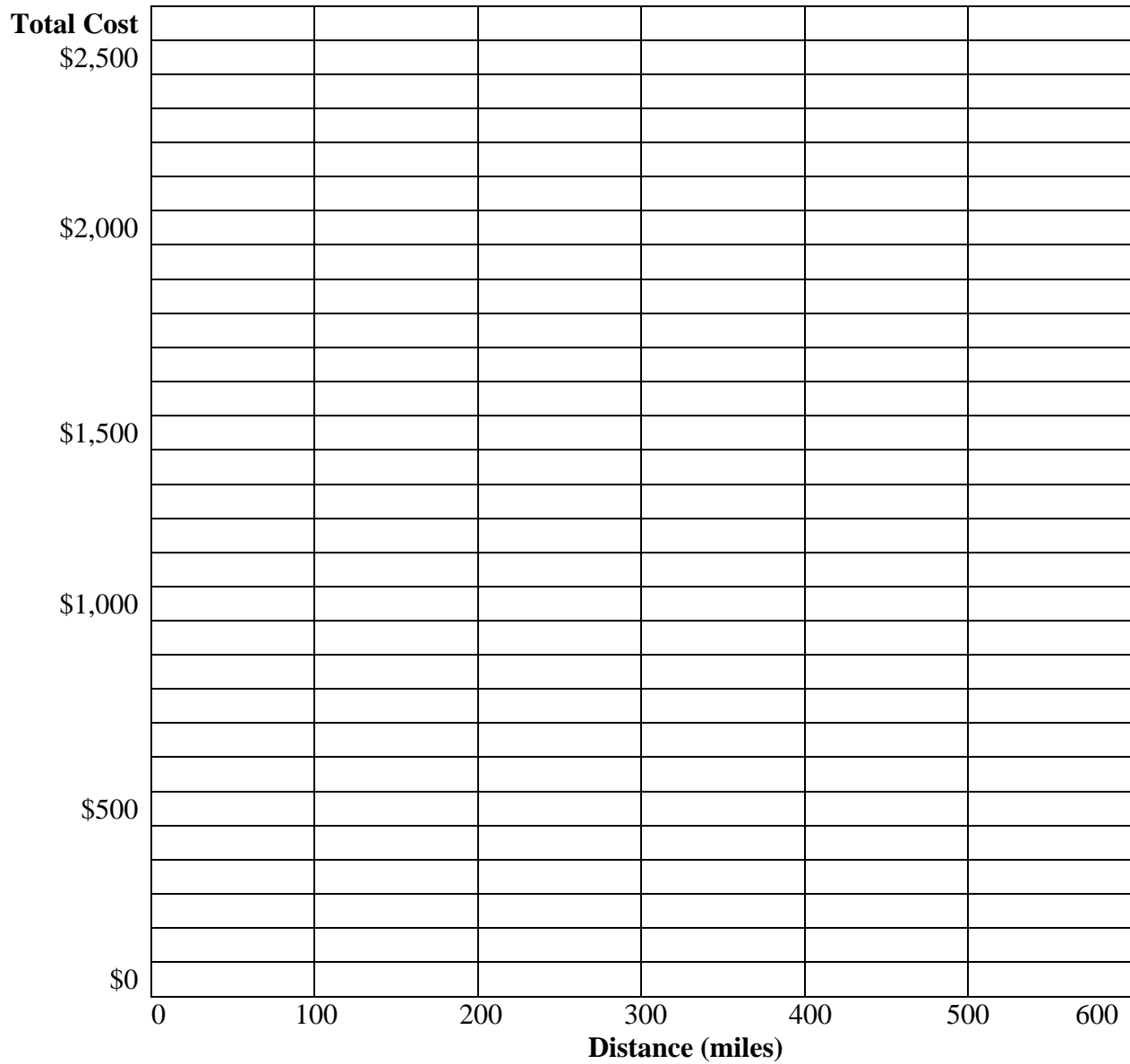
As the truck distance increases, what happens to cost per mile? _____

As a result, the trucking company sets prices in a way that encourages customers to ship products _____ distances.

Using the following trucking company prices, calculate and then graph (next page) the customers total costs for shipping products 100, 200, 300, 400, 500 and 600 miles.

Miles	Price Per Mile
0-150	\$10.00
151-250	\$ 7.50
251-350	\$ 6.33
351-450	\$ 5.50
451-550	\$ 4.80
551-over	\$ 4.25

Price to Distance Graph



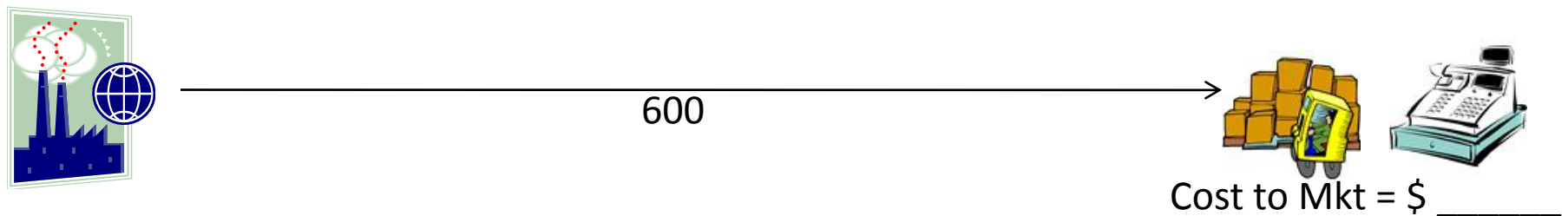
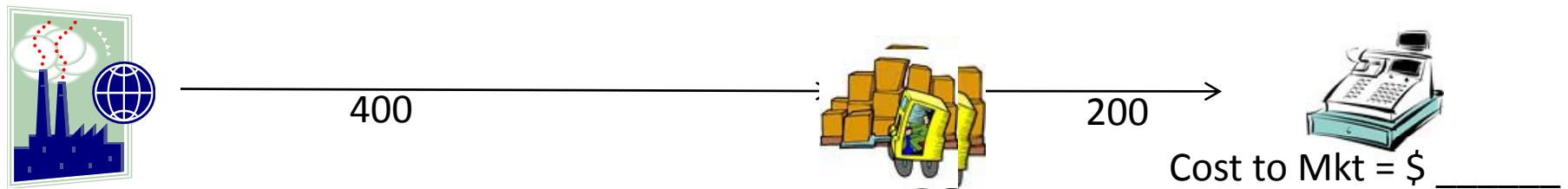
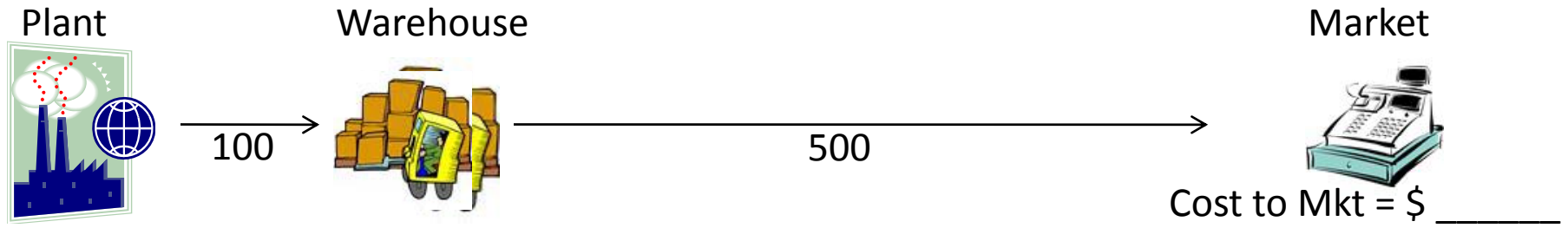
Principle:

Tapering Principle: As shipment distance increases, total transportation cost _____ at a(n) _____ rate.

Application:

The customer moves finished goods from the plant to the warehouse and then on to the market. According to the Tapering Principle where should the warehouse be located (see figure next page)? Why? Locate the warehouse at which location?

Tapering Principle Warehouse Location



ASSIGNMENT 4
TRANSPORTATION COSTING / PRICING ASSIGNMENT
Part 2

Objective:

To show the relationship between weight and transportation cost.

Information:

The following table contains UPS truck rates for residential delivers in Zone 2 (local.)

Weight per Shipment (lbs.)	UPS Rate (total cost)	Cost per Pound
1	\$2.18	
2	\$2.19	
3	\$2.27	
4	\$2.37	
5	\$2.46	
6	\$2.56	
7	\$2.63	
8	\$2.72	
9	\$2.82	
10	\$2.90	
15	\$3.25	
20	\$3.71	
25	\$4.25	

Fill in the table and answer the following: A customer orders ten 1lb units from Lands' End catalog. Should Lands' End ship these:

Individually
(10 pkgs of 1 unit each)

Small Groups
(2 pkgs of 5 units each)

Large Group
(1 pkg of 10 units)

\$ Total Costs _____ \$ Total PS Costs _____ \$ Total UPS Costs _____

Principle:

As weight increases, total transportation cost _____ at a(n)
 _____ rate and as weight increases, cost per pound _____ .

When larger shipments are involved, transportation prices are set for a range of pounds. For example:

0-1,999 lbs = \$8/lb

2,000-3,999 lbs = \$5/lb

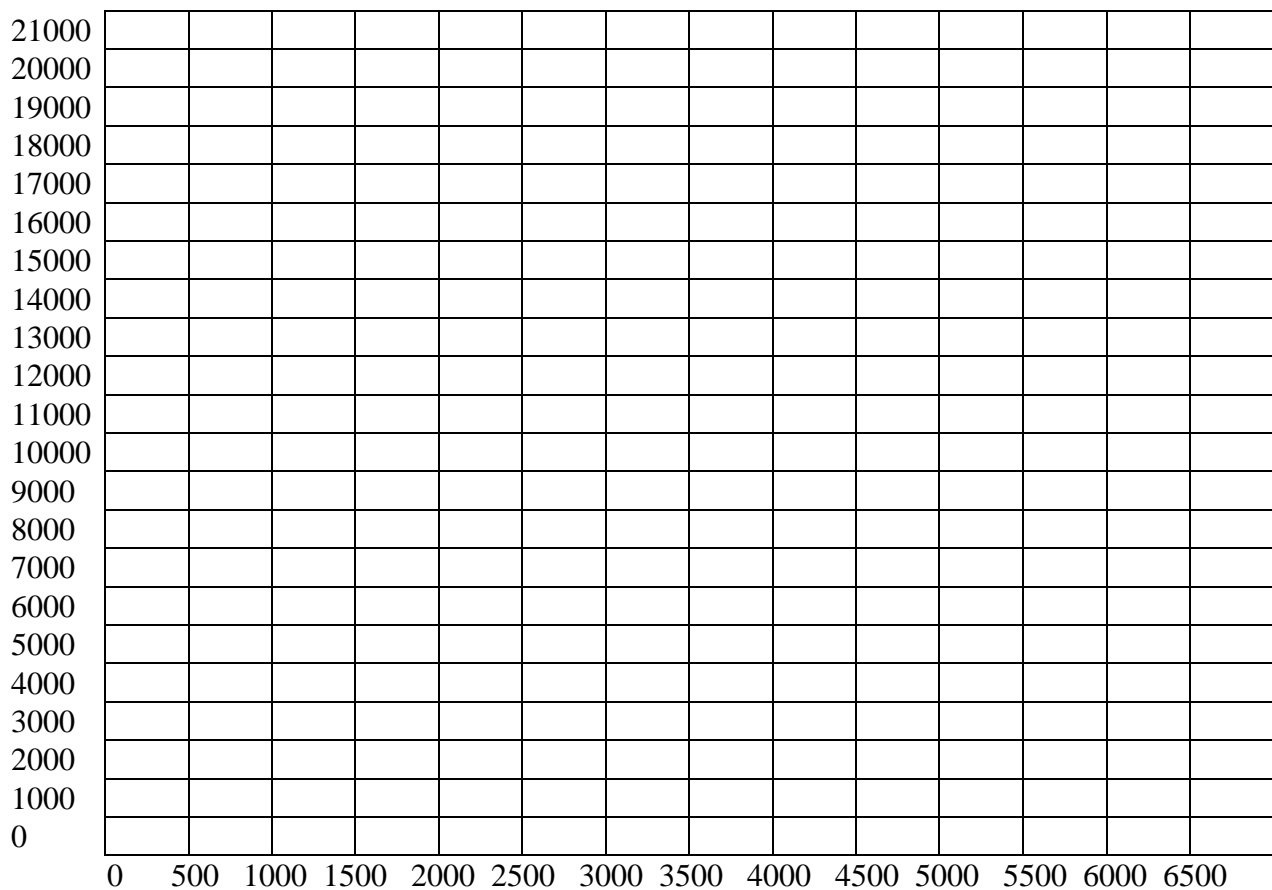
4,000-6,999 = \$3/lb

Fill in the following table using the transportation prices listed above:

LBS	0	1000	1500	1999	2000	3000	3999	4000	5000	6999
Total Cost										

Develop a line graph using the table above.

\$\$



Weight (LBS)

If you have shipments that weight between 2,000-3,999 lbs, at what shipment size (in pounds) is the total cost equal to the cost of shipping 4,000 lbs? _____

Locate this point on the graph and place a star on the graph at this point.

This point is called a **WEIGHT BREAK**. When shipping products, a traffic manager is allowed to use the following weight break rule:

From 2,000 lbs to _____ (weight break), pay actual total cost.

From _____ (weight break) to 3,999 lbs., ship as 4,000 lbs and pay the total cost for 4,000 lbs {should be lower.}

Beyond 4,000 lbs, pay actual cost until next weight break is reached.

In essence, between 2,000-3,999 lbs, the traffic manager is allowed to cut across the \$12,000 line on the graph from the weight break point to the 4,000 lbs point.

Are there any other weight breaks on the graph? Where? _____ lbs.

Place a star at this point, if it exists.

ASSIGNMENT 4
TRANSPORTATION COSTING / PRICING ASSIGNMENT
Part 3

Objective:

Explore the relationship between product densities and transportation vehicle utilization.

Information:

A West Coast food company manufactures two products: canned soup in L.A. and boxes of crackers in San Diego. Both products are sold in Northeast U.S. markets. The product characteristics and annual sales for the NE market are provided below:

	NE Sales (cases)	Case Weight (LBS)	Case Cube (Cubic Feet)
Soup	620,000	40	1
Crackers	620,000	12	3

The food company uses a fleet of 48 foot trucks to ship the products to NE markets. Truckload dimensions are as follows:

Net Truckload Capacity	76,800 lbs	3,432 Cu Ft
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Application:

How many TL's of soup must be shipped from LA to NE markets annually?

How many TL's of crackers must be shipped from San Diego to NE markets annually?

Total Truckloads Annually?

Can you reduce the total number of TL Annually?

YES

NO

If so, how many total TL's would it take annually?
