

Study questions on location

1.

Your company wants to locate two facilities to serve two groups of demand points. The following data were collected:

Demand point	XY- coordinates	Trips per day
A	(10, 15)	10
B	(15, 20)	15
C	(20, 15)	20
D	(30, 40)	30
E	(40, 45)	15

- Draw a grid map, showing the location of the demand points
- Divide the points into two groups, north and south. The north facility will serve B, D, and E, whereas the south facility will serve A and C. Let the facility locations be the centers of gravity of the two areas, rounded to the nearest whole numbers. What is the total load-distance score for the entire system, based on Euclidean distance?
- Repeat part (b) but for an East – West division. The west facility will serve A, B, and C, and the East facility will serve D, and E. Is this solution better or worse than the one in part (b)?

2.

A company that manufactures brake discs for the automotive industry is considering three different locations, Köping, Eskilstuna, and Västerås for their new factory. Studies have revealed that the fixed costs per year at the sites are \$30,000, \$60,000, and 110,000 respectively. The variable costs are \$75 in Köping, \$45 in Eskilstuna, and \$25 in Västerås, per unit. The brake discs are expected to sell at \$120 per disc. The company expects to produce a volume of 2000 discs per year and now wants to find the most economical location for their production.

- Which location is the most economical at the expected sales volume?
- In which range of production volumes would each alternative be the most economical?

3.

There are six groups of dominating factors affecting the decision for new manufacturing plants. Name three of them and describe them in detail.

Other excersises can be found in the old exams:

2011-06-09: Q6,

2011-08-16: Q13

2012-01-12: Q6, Q12