

Thirteenth Edition

Retail Management

A Strategic Approach

CHAPTER 9: Trading-Area Analysis

Retail Mathematics Problems

Here are extra math problems on store location. The answers appear at the end of this file.

1. Cities A and B are 50 miles apart. City A has a population of 500,000 and City B has a population of 125,000. According to Reilly's law, what is the point of indifference for City B?

- a. 5.0 miles
- b. 16.7 miles
- c. 25.0 miles
- d. 33.3 miles

2. If City B, from the prior problem, has a population increase of 20 percent over the next three years while City A has an increase of 10 percent, what will the point of indifference be for City B?

- a. 5.0 miles
- b. 16.2 miles
- c. 25.0 miles
- d. 32.5 miles

3. Respectively, Cities A, B, and C have 5,000; 10,000; and 12,500 square feet of retail selling space allocated to gift items. Potential customers live 10 minutes from City A, 15 minutes from City B, and 20 minutes from City C. The effect of travel time is 1. According to Huff's law, what percentage of customers will shop in City A for gift items?

- a. 9.3
- b. 27.9
- c. 34.4
- d. 37.2

4. If the effect of travel time in the prior problem is really 2, what percentage of customers will shop in City A for gift items?

a. 18

b. 28.7

c. 34

d. 40

5. A community has 40,000 residents; 35,000 of them regularly shop in that community. These shoppers spend an average of \$200 per week in the community. What are the expected annual sales in the community?

a. \$ 6,000,000

b. \$60,500,000

c. \$364,000,000

d. \$416,000,000

6. If the percentage of residents in problem 5 who shop in their community goes to 90 percent and the average expenditures stay constant at \$200 per week, by what percentage will expected annual sales in that community increase?

a. 1.0

b. 2.9

c. 3.3

d. 6.7

ANSWERS:

1. b
2. b
3. b
4. d
5. c
6. b