

1. Which of the following is more economical when renting a vehicle? Justify your answer.

LG's Rent a Car: Php1,500 per day plus Php 35 per kilometer travelled

Rent and Drive: Php 2,000 per day plus Php 25 per kilometer travelled

**Solution.** Assume that we usually travel  $x$  kilometers per day. Then we spend  $1500 + 35 \cdot x$  in the first case and  $2000 + 25 \cdot x$  in the second. It follows from

$$1500 + 35x = 2000 + 25x$$

$$10x = 500$$

$$x = 50$$

that the prices are equal if we travel 50 kilometers per day. Also observe that

$x > 50$  implies that  $1500 + 35x > 2000 + 25x$

and  $x < 50$  implies  $2000 + 25x > 1500 + 35x$ , respectively.

**Answer.** LG's Rent a Car is more economical for travelling for less than 50 kilometers, Rent and Drive is more economical for travelling for more than 50 kilometers per day. The prices are equal if we travel exactly 50 kilometers per day.