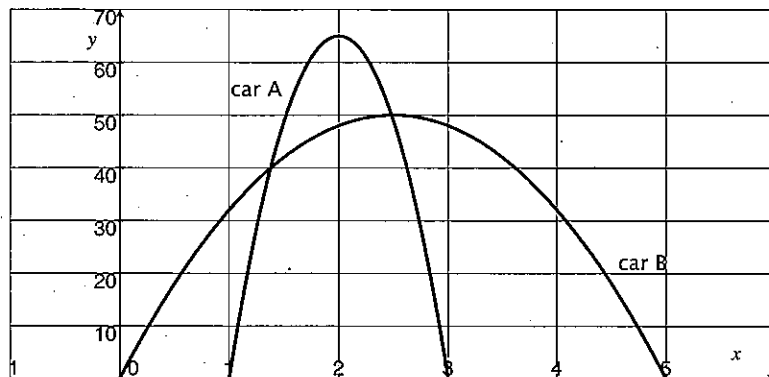


Key

Quiz 6 TQS 211

Show *all* your work (algebraically or geometrically) for each and simplify. No credit is given without supporting work.

1. (§5.1 #4) Two cars start at the same place and travel in the same direction along a straight road. The graph below gives the velocity y , of each car as a function of time x .



- (a) [1] Which car starts first?

B

- (b) [2] Which car attains the larger maximum velocity? What is it?

A

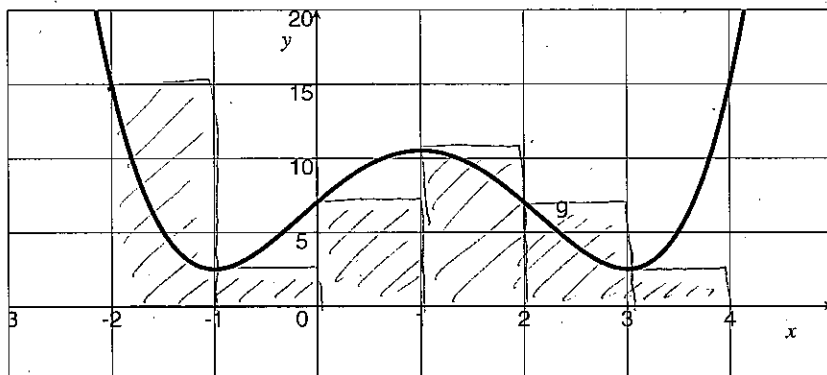
65 mi/hr.

- (c) [2] Which car travels farther? Justify your answer.

B

b/c. the distance traveled corresponds to the area under the curve of car B has more area under it (& above the x axis) than car A.

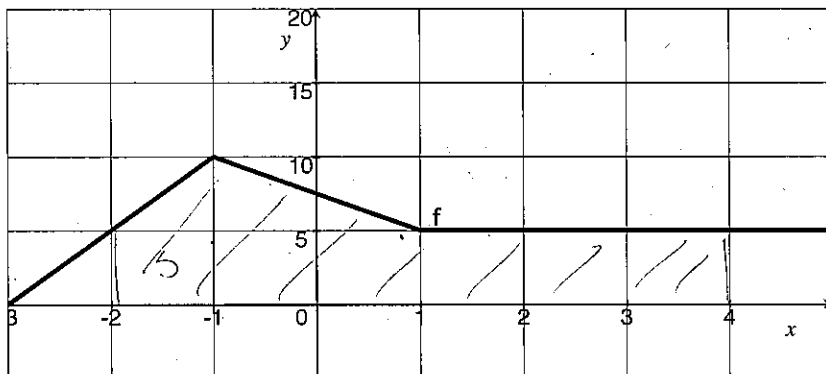
2. (§5.2 #5) [3] Use the graph below to estimate $\int_{-2}^4 g(x) dx$ with a left-hand sum and six rectangles.



left hand
 rectangles
 magnitude
 +1
 +1
 +1

$$\begin{aligned} &\approx 15 \cdot 1 + 2.5 \cdot 1 + 7.5 \cdot 1 + 11 \cdot 1 + 7 \cdot 1 + 2.5 \cdot 1 \\ &= 15 + 2.5 + 7.5 + 11 + 7 + 2.5 \\ &= 17.5 + 18.5 + 9.5 \\ &= 36 + 9.5 \\ &= 45.5 \end{aligned}$$

3. (§5.2 # 16) [2] Use the graphs below to find $\int_{-2}^4 f(x) dx$.



area
 got it
 +1
 +1

$$\begin{aligned} 6 \cdot 5 + 3 \cdot 5 \cdot \frac{1}{2} &= 30 + \frac{15}{2} \\ &= \frac{60}{2} + \frac{15}{2} = \frac{75}{2} = 37.5 \end{aligned}$$