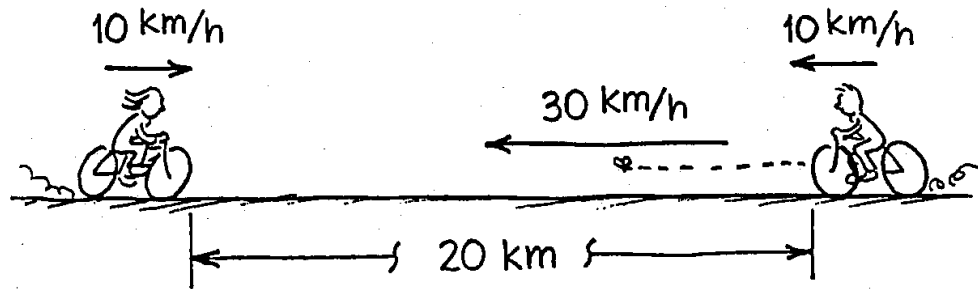


Warm Up

WHEN THE 10 km/h BIKES ARE 20 km APART, A BEE BEGINS FLYING FROM ONE WHEEL TO THE OTHER AT A STEADY SPEED OF 30 km/h. WHEN IT GETS TO THE WHEEL, IT ABRUPTLY TURNS AROUND AND FLIES BACK TO TOUCH THE FIRST WHEEL, THEN TURNS AROUND AND KEEPS REPEATING THE BACK-AND-FORTH TRIP UNTIL THE BIKES MEET, AND SQUISH!



QUESTION

HOW MANY KILOMETERS DID THE BEE TRAVEL IN ITS TOTAL BACK-AND-FORTH TRIPS?

Warm Up

SOLUTION:

LET THE EQUATION FOR DISTANCE BE A GUIDE TO THINKING :

$$d = \bar{v} t$$

WE KNOW $\bar{v} = 30 \text{ km/h}$, AND WE MUST FIND THE TIME t . WE CONSIDER THE SAME TIME FOR THE BIKES AND SEE IT TAKES 1 HOUR FOR THEM TO MEET, SINCE EACH TRAVELS 10 km AT A SPEED OF 10 km/h. SO,

$$d = \bar{v} t = 30 \text{ km/h} \times 1 \text{ h} = 30 \text{ km}$$

THE BEE TRAVELED A TOTAL OF 30 km.