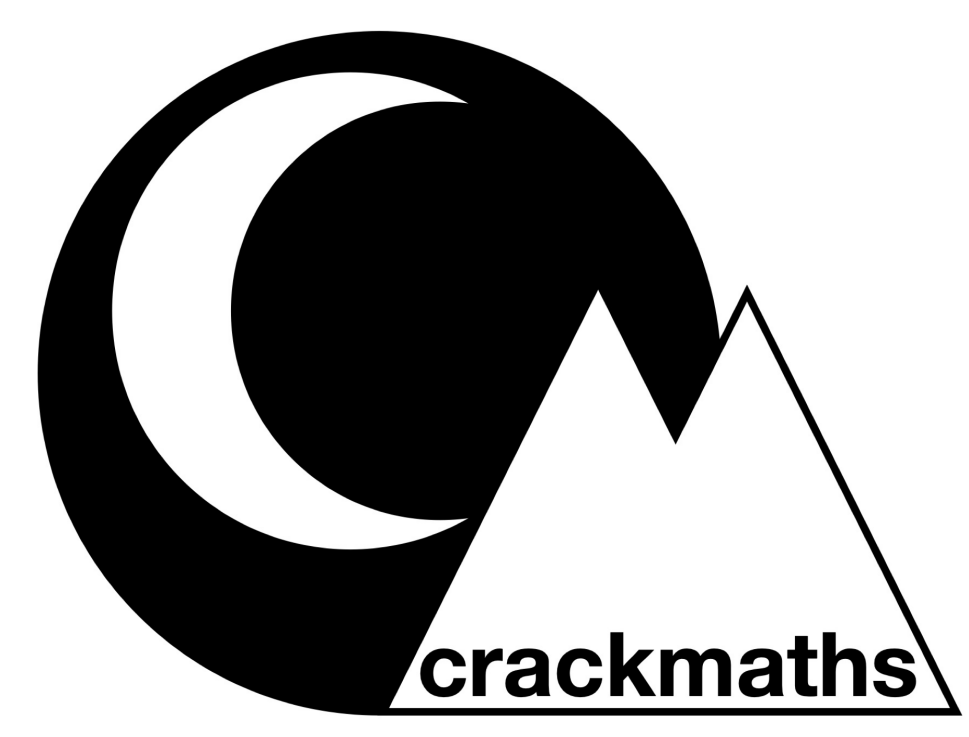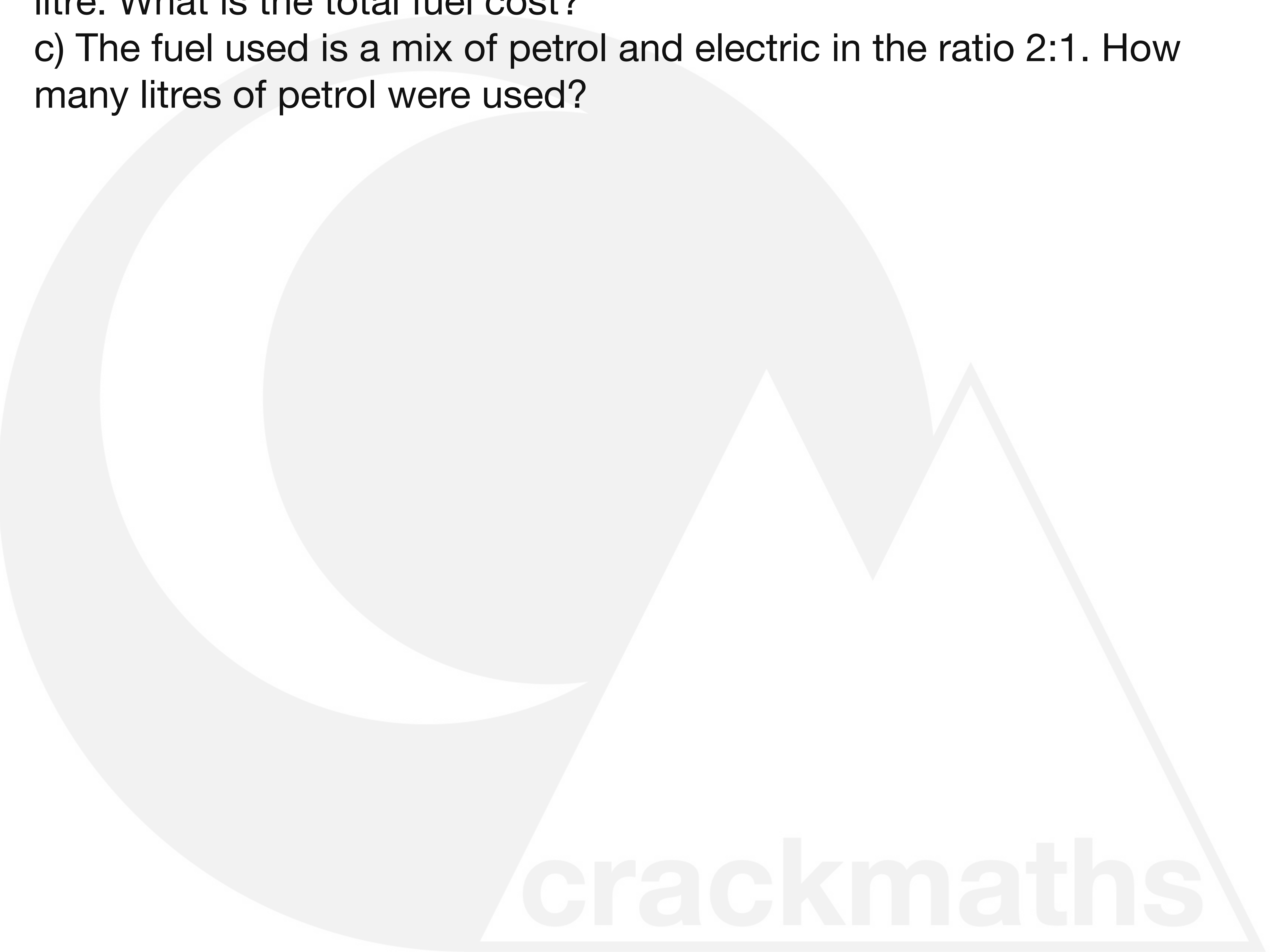# Speed, Ratio and Cost
# Tutorials: 26, 27, 28, 29, 40 and 41

## 1. Basic journey with fuel cost and ratio of fuel type

A car travels 180 miles in 3 hours.

a) What is the average speed?
b) The car uses 12 litres of fuel for this journey. Fuel costs £1.50 per litre. What is the total fuel cost?
c) The fuel used is a mix of petrol and electric in the ratio 2:1. How many litres of petrol were used?

## 2. Basic journey with fuel cost and ratio of fuel types

A van travels 252 miles in 4.5 hours.

a) What is the average speed?
b) The van uses 21 litres of fuel. Fuel costs £1.62 per litre. What is the total cost of the fuel?
c) The fuel used is a diesel/biofuel mix in the ratio 3:2. How many litres of diesel were used?
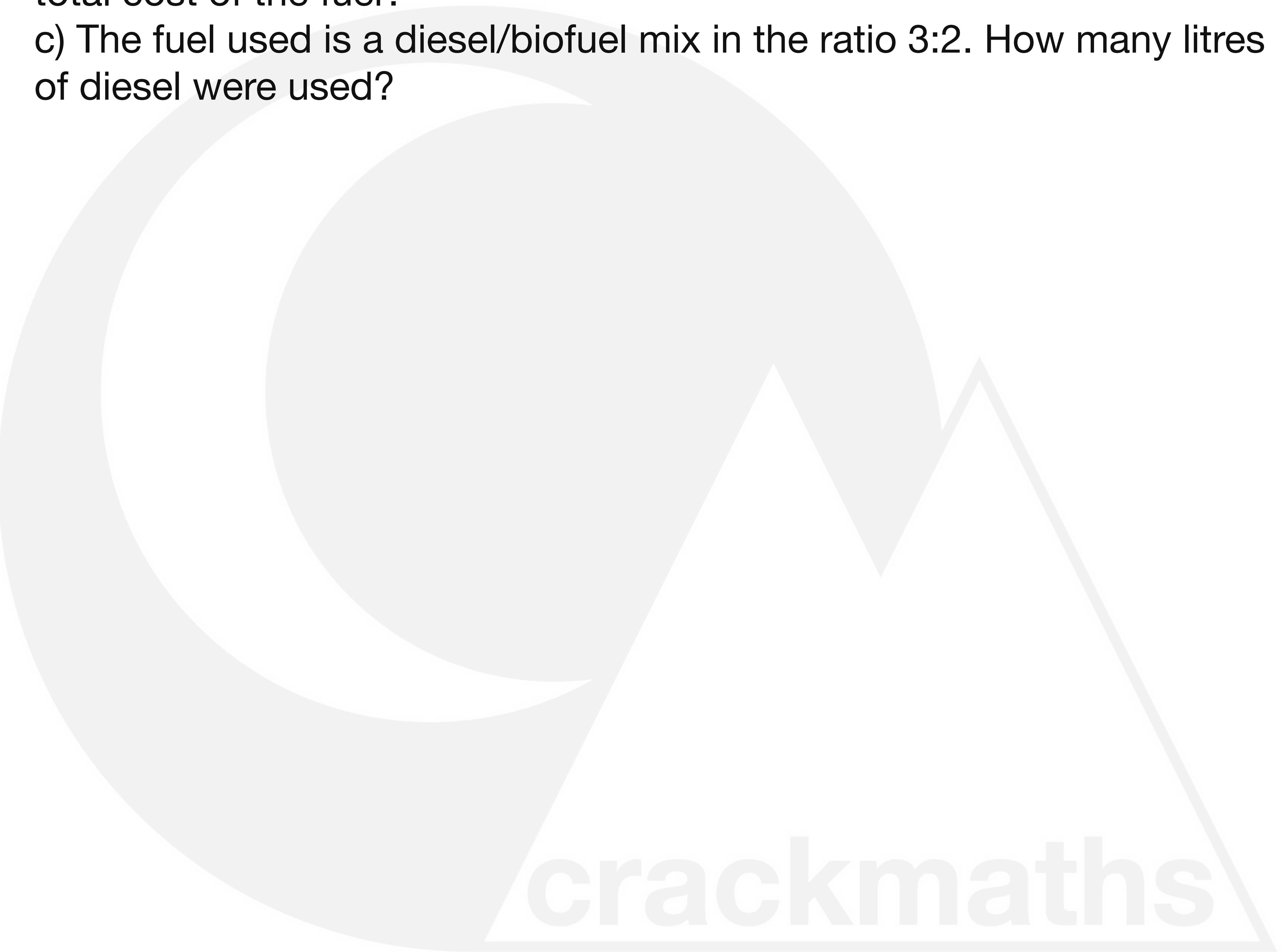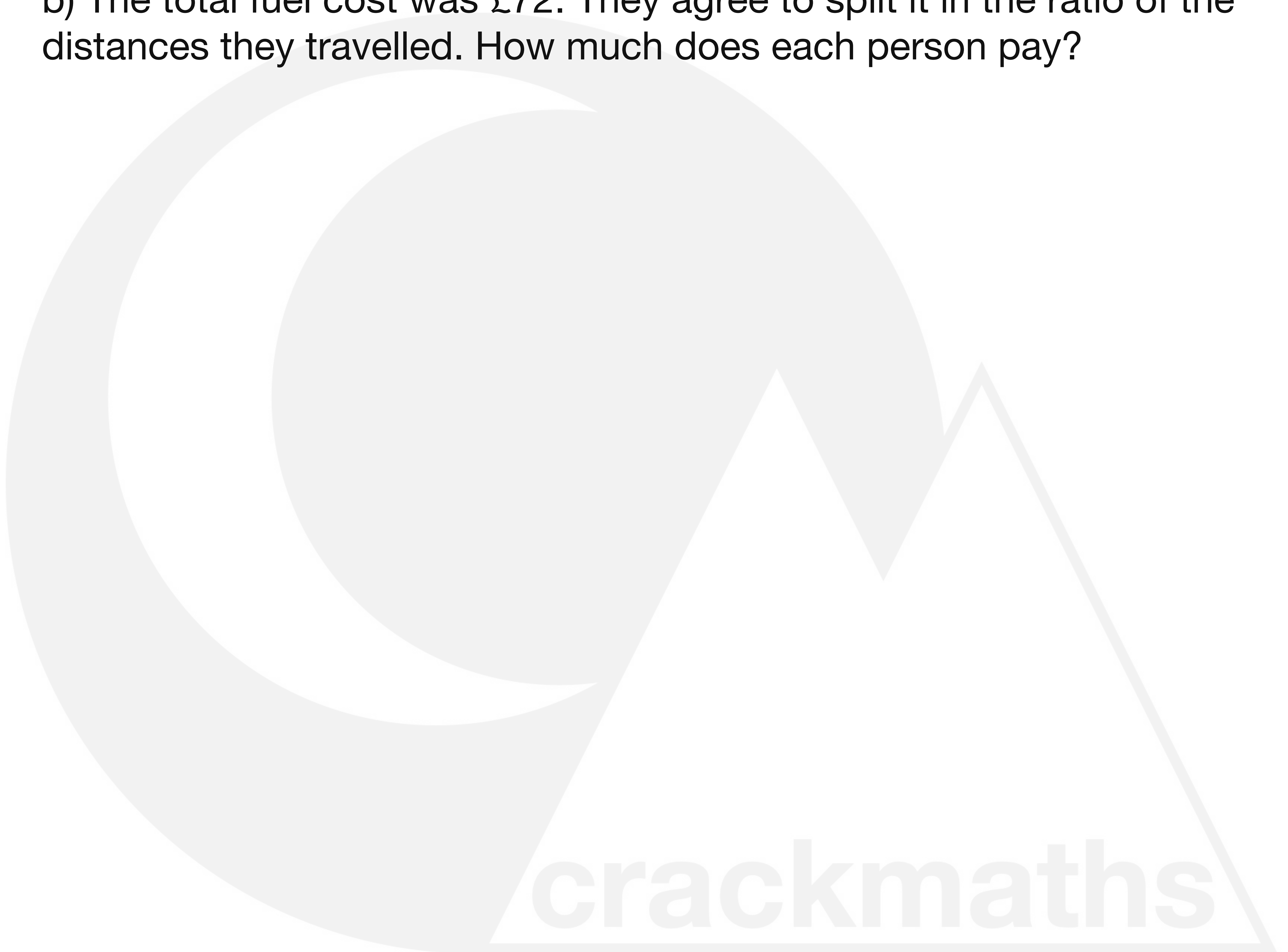
## 3. Two vehicles, comparing speeds and splitting costs by ratio

Two friends take a road trip.
Car A travels 240 miles in 4 hours. Car B travels 200 miles in 5 hours.

a) Which car had the higher average speed?
b) The total fuel cost was £72. They agree to split it in the ratio of the distances they travelled. How much does each person pay?
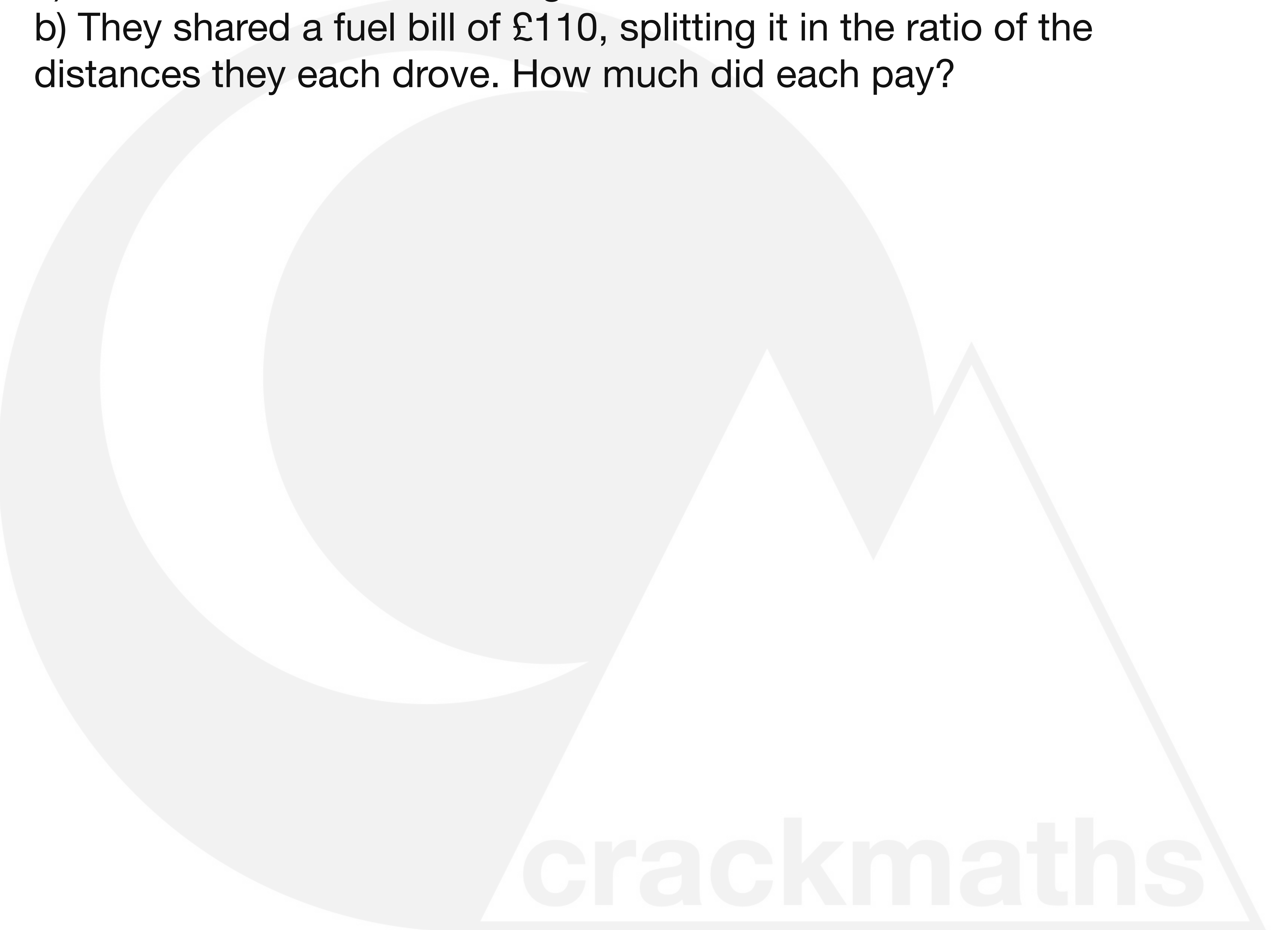
## 4. Two vehicles, comparing speeds and splitting costs by ratio

Two delivery drivers each cover different distances.
Driver A travels 375 miles in 6 hours. Driver B travels 330 miles in 5.5 hours.

a) Who drove faster, on average?
b) They shared a fuel bill of £110, splitting it in the ratio of the distances they each drove. How much did each pay?

## 5. Time, fuel efficiency, and cost with ratio of passengers

A coach travels at an average speed of 60 mph and takes 2.5 hours to reach its destination.
It uses 30 litres of fuel at £1.48 per litre.

a) How far does the coach travel?
b) What is the total cost of the fuel?
c) There are adults and children on the coach in the ratio 3:2. If there are 20 children, how many adults are there?

## 6. Time, fuel efficiency, and cost with ratio of passengers

A minibus travels at an average speed of 68 mph for 3.5 hours.
It uses 42 litres of fuel, costing £1.62 per litre.

a) How far does the minibus travel?
b) What is the total fuel cost?
c) The passengers include students and teachers in the ratio 5:2. If there are 14 teachers, how many students are there?
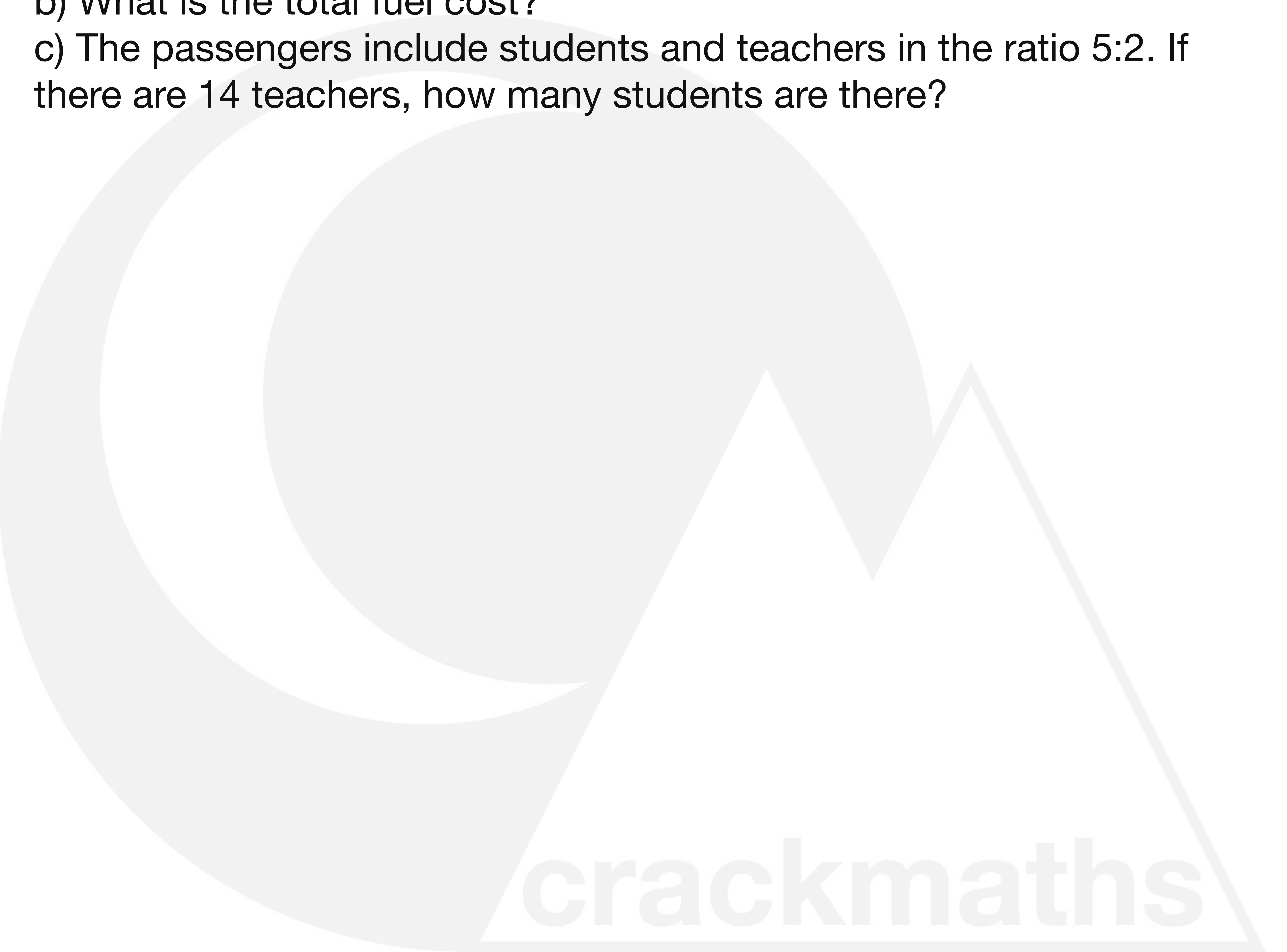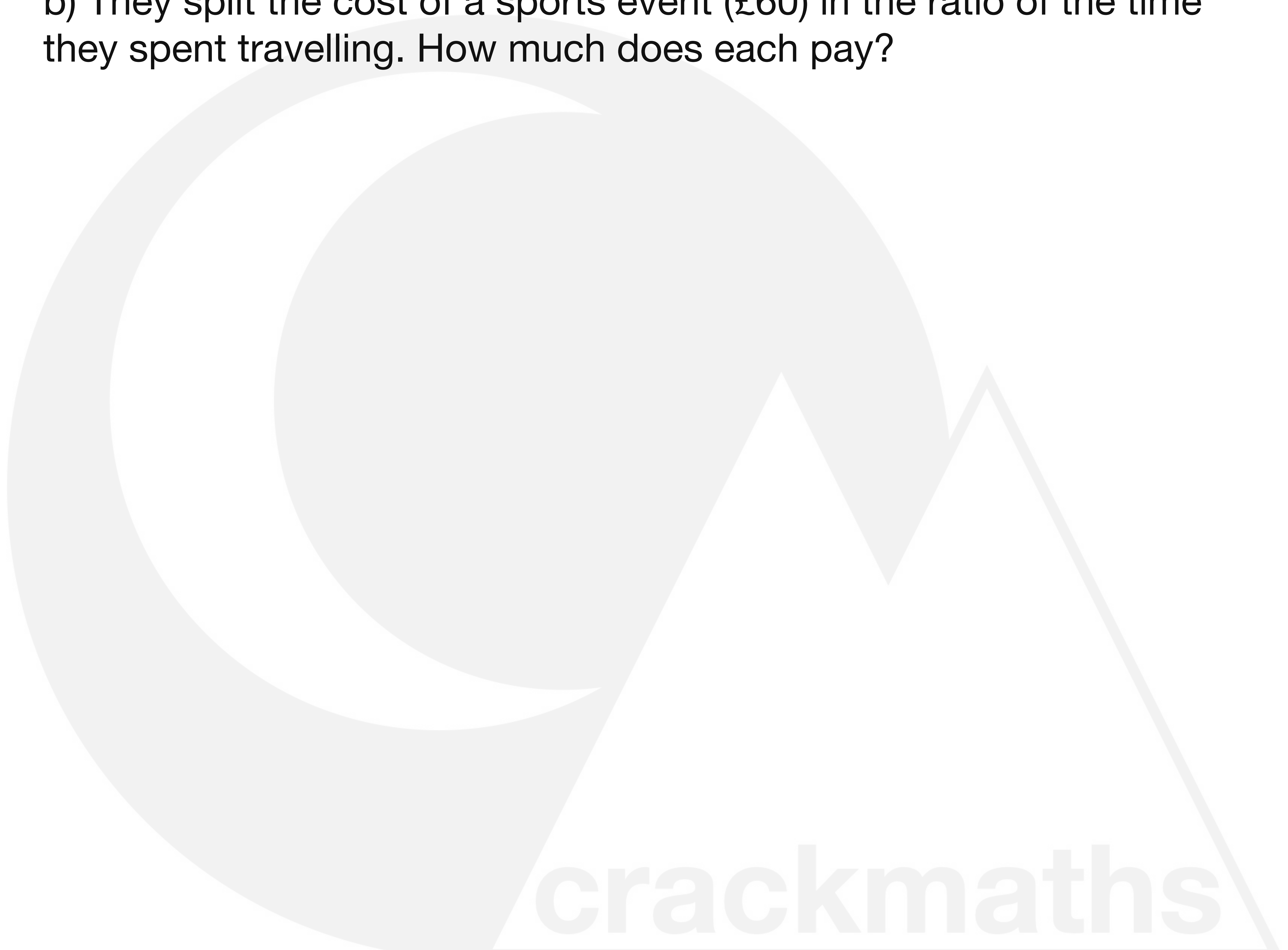
## 7. Comparing journey speeds, sharing cost by speed or time ratio

Jack cycles 36 km in 2 hours.
Ella runs 24 km in 3 hours.

a) Who travels faster, and by how much (in km/h)?
b) They split the cost of a sports event (£60) in the ratio of the time they spent travelling. How much does each pay?
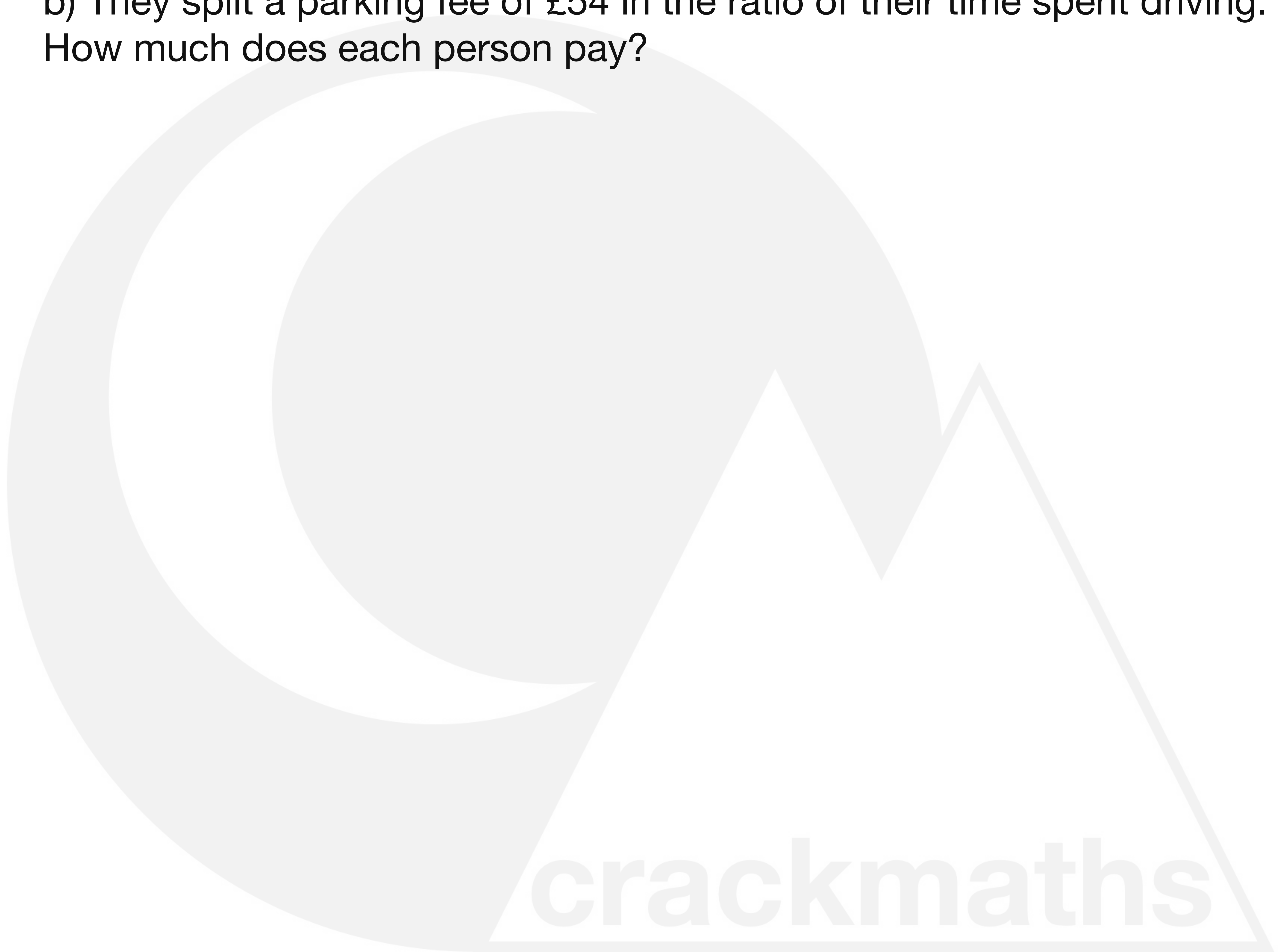
## 8. Comparing journey speeds, sharing cost by speed or time ratio

Sam drives 150 km in 2.5 hours.
Tina drives 135 km in 2 hours.

a) Who has the higher average speed, and by how much?
b) They split a parking fee of £54 in the ratio of their time spent driving.
How much does each person pay?

## 9. Journey time, fuel cost, ratio of distance stages

A delivery route is completed in 3 hours at an average speed of 55 mph.

a) How far was the journey?
b) The vehicle used 18 litres of fuel at £1.55 per litre. What was the total cost?
c) The route is split into two stages in the ratio 5:4. How long (in miles) is each stage?
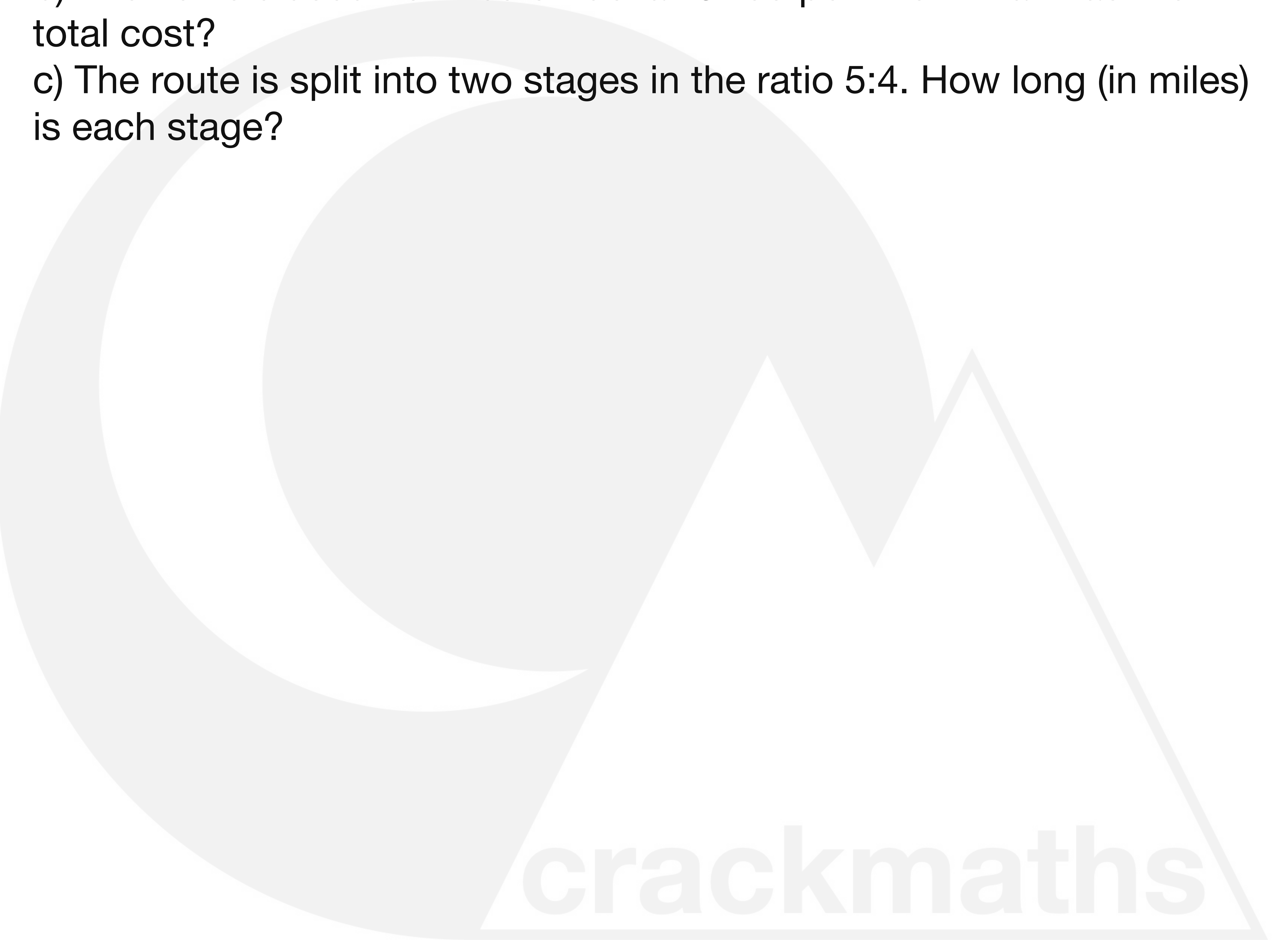
**10. Journey time, fuel cost, ratio of distance stages**

A lorry completes a delivery in 4.5 hours at an average speed of 62 mph.

a) How far does it travel?
b) It uses 30 litres of fuel at £1.68 per litre. What is the total fuel cost?
c) The journey is in three stages, in the ratio 2:3:4. How many miles is each stage?