

# REASONING

## 8ER15

First name \_\_\_\_\_

Last name \_\_\_\_\_

School \_\_\_\_\_

Class \_\_\_\_\_

Date of birth ○○ ○○ ○○○○

Date of test ○○ ○○ (2) (0) (1) (5)

Total score  (maximum 20)

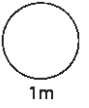


1

Use the map on the next page.

Write the routes in order, **shortest distance** first.

shortest distance



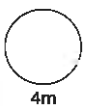
Now write the routes in order, **fastest time** first.

Comparing travel times for 1km

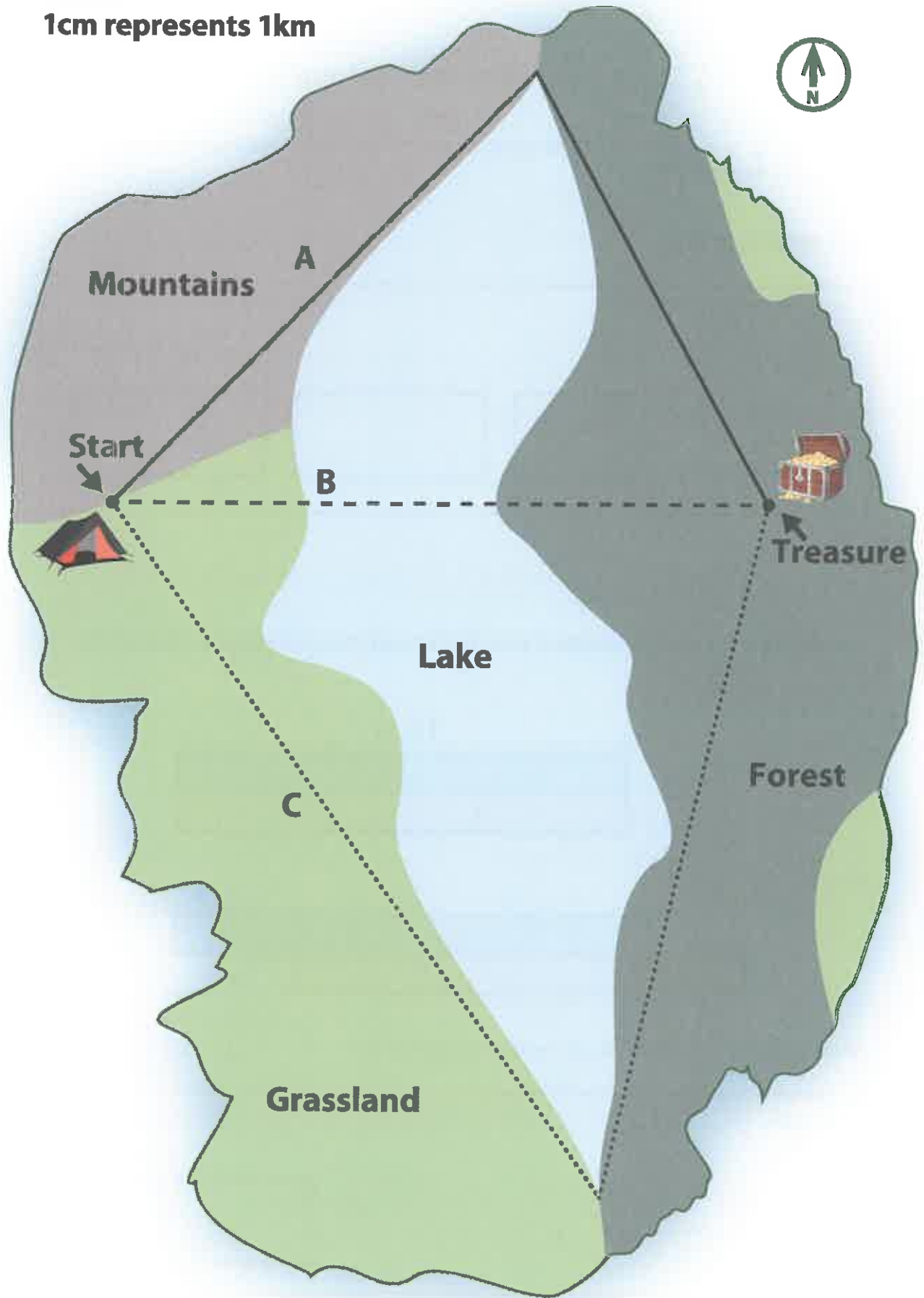
- forest: **twice** as long as grassland
- mountains: **3 times** as long as grassland
- raft: **9 times** as long as grassland

Show measurements and calculations to explain how you decide.

fastest time



Scale:  
1cm represents 1km



2 These three dogs are different ages.

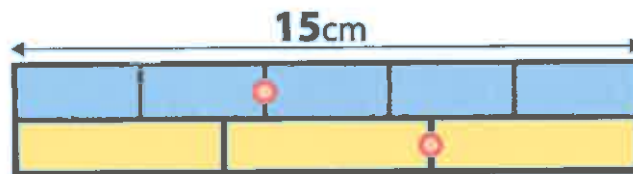


- Their ages, in years, **add** up to **15**
- Their ages, in years, **multiply** together to make **60**

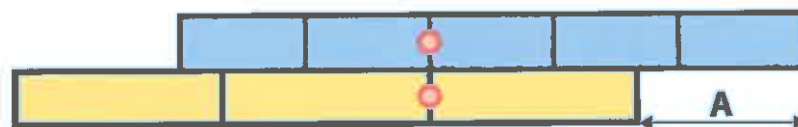
How old is each dog?

2m

3 The diagram shows five identical blue bricks and three identical yellow bricks. A marker is on each row.



Now the markers join.


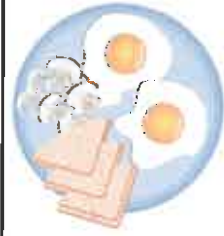
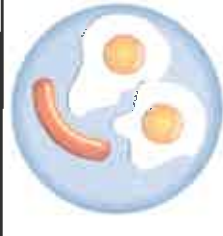
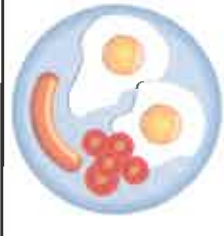



What is the length of A? Show how you work it out.

2m

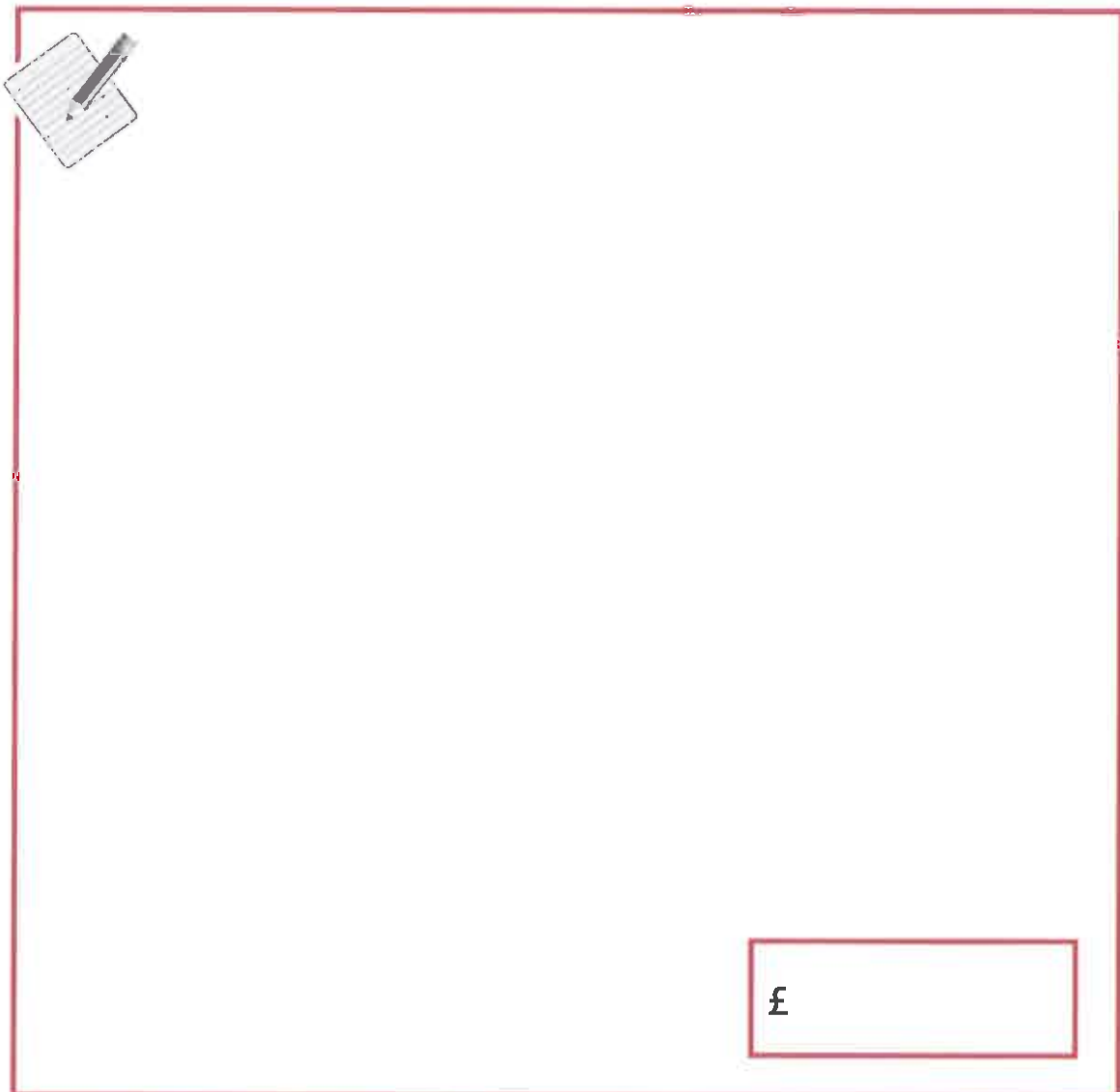
4

Breakfast menu:

Eggs and toast £1.00 	Eggs, toast and mushrooms £1.25 	Eggs and sausage £1.50 	Eggs, sausage and tomatoes £1.65 	Eggs, sausage and toast £1.80 
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Ethan wants sausage, mushrooms, tomatoes and toast.

Work out what it should cost.

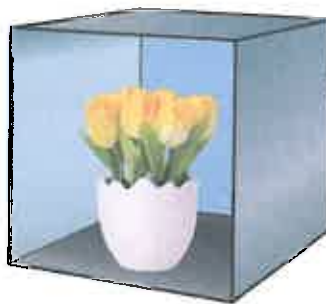


5 Rhiannon buys a display unit for her wall.

The height is **50cm**.

The length is **50cm**.

The depth is **50cm**.



Rhiannon is going to paint the **inside and outside** of the unit purple, but she is **not** going to paint the surface that will be attached to the wall.

She reads the instructions on her paint tin:



This tin of paint covers  
**1.5m<sup>2</sup>**

Does Rhiannon have enough paint?

Show calculations to explain how you know.



6


The clock shows:



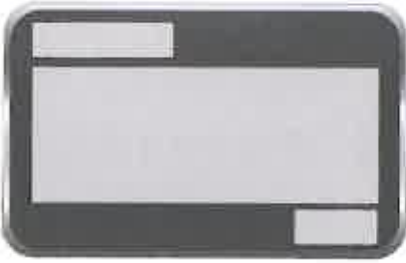
After **60** minutes it will show:



After **another 6000** minutes what will it show?



Show the time, day and am or pm on this clock.



4m

TOTAL  
7m

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