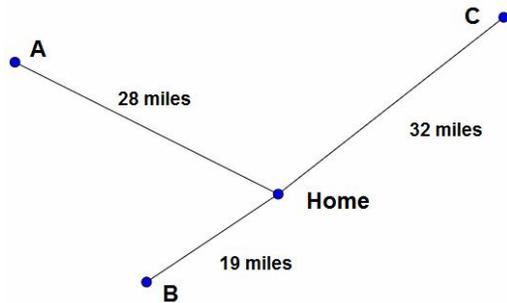## Problem Solving GCSE Questions

(1) Ann, Bettie and Carol are sisters. They are driving home from work from points A, B and C respectively. Carol travels at 56mph, Bettie at 42mph and Ann at 51mph. If they all leave at the same time from work who will get home first?

A

28 miles

C

32 miles

Home

19 miles

B

(2) Fred sets up a business making silver dog statues. Each statue needs $248cm^3$ of silver. He buys a 1 meter cubic block of silver for £10428 and sells each statue he makes for £16.48. Given that there is no waste in the production process and he sells all of the statues he can possibly make, find the maximum profit Fred can achieve.

(3) In Australia a computer costs $785 including worldwide shipping. In China the same computer costs 3400 Chinese Yuan including worldwide shipping.
Kate lives in the UK and needs to buy a new computer.
Using the Exchange rates below, advise her on which country to buy it from. You must show full workings.
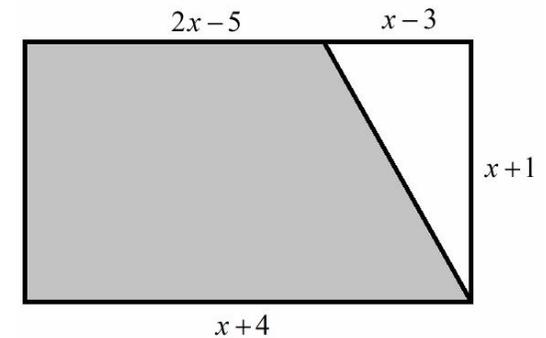
1 Australian dollar = 0.7 US dollars
1 US dollar = 0.9 Euro
1 Chinese Yuan = 20 Japanese Yen
133 Japanese Yen = 1 Euro
1 Japanese Yen = 0.5 Indian Rupee

(4) Find the area of the shaded trapezium in the rectangle below.



$2x-5$ $x-3$

$x+1$

$x+4$

(5) In a bag there are 3 different colour beads. There are red beads, green beads and blue beads. The ratio of red beads to green beads is 2:3. The ratio of blue beads to green beads is 7:15. Given that there are 42 blue beads, find how many more red beads there are than blue beads.

(6) Joel is riding a bicycle. The wheels of the bicycle have a diameter of 78cm including the tyres. Joel rides three and a half kilometres one day. How many complete revolutions will his wheels do on his journey?

(7) John is studying the weather for the next two days. The forecast is either sunny or cloudy. The weather on the second day is not influenced by the weather on the first day.
The probability of both days being sunny is 0.28. The probability of the second day being sunny is 0.7.
Find the probability that both days are cloudy.

(8) In the diagram below $BC = 8cm$ and is a tangent to the circle. A is the centre of the circle and $AC = 10cm$
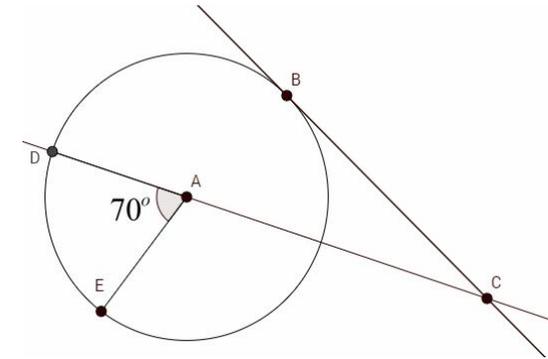
Find the area of the sector ADE giving your answer to 1 decimal place.