

- 1** Tracey is going to choose a main course and a dessert in a cafe.  
She can choose from 8 main courses and 7 desserts.

Tracey says that to work out the number of different ways of choosing a main course and a dessert you add 8 and 7

- (a) Is Tracey correct?  
You must give a reason for your answer.

.....  
.....

(1)

12 teams play in a competition.  
Each team plays each other team exactly once.

- (b) Work out the total number of games played.

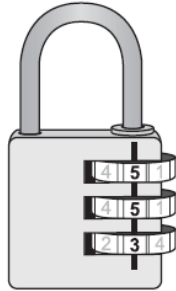
.....  
(2)

- 2** There are 16 hockey teams in a league.  
Each team played two matches against each of the other teams.

Work out the total number of matches played.

.....  
(2)

- 3 There are three dials on a combination lock.  
Each dial can be set to one of the numbers 1, 2, 3, 4, 5  
The three digit number 553 is one way the dials can be set, as shown in the diagram.



- (a) Work out the number of different three digit numbers that can be set for the combination lock.

.....  
(2)

- (b) How many of the possible three digit numbers have three different digits?

.....  
(2)

- 4 Sadia is going to buy a new car.  
For the car, she can choose one body colour, one roof colour and one wheel type.

She can choose from

19 different body colours

25 different wheel types

The total number of ways Sadia can choose the body colour and the roof colour and the wheel type is 3325

Work out the number of different roof colours that Sadia can choose from.

.....  
(2)

- 5 Jack is in a restaurant.  
There are 5 starters, 8 main courses and some desserts on the menu.

Jack is going to choose one starter, one main course and one dessert.

He says there are 240 ways that he can choose his starter, his main course and his dessert.

Could Jack be correct?

You must show how you get your answer.

(2)

- 6 In a school there are 16 teachers and 220 students.  
Of these students 120 are girls and 100 are boys.

One teacher, one girl and one boy are going to be chosen to represent the school.

Work out the number of different ways there are to choose one teacher, one girl and one boy.