



# EXAM PAPERS PRACTICE

GCSE OCR Math J560

Counting

Answers

*"We will help you to  
achieve A Star "*



### Answer 1

Jeff is choosing a shrub and a rose tree for his garden.

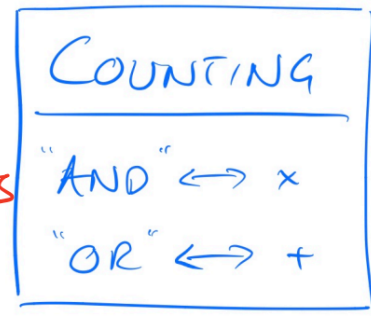
At the garden centre there are 17 different types of shrubs and some rose trees.

Jeff says,

“There are 215 different ways to choose one shrub and one rose tree.”

Could Jeff be correct?

You must show how you get your answer.



CHOICES = SHRUBS × ROSE TREES

$$\frac{215}{17} = \frac{17}{17} \times RT$$

$$12.647... = RT$$

BUT NO OF ROSE TREES MUST BE  
A WHOLE NUMBER SO JEFF CANNOT  
BE CORRECT



**Answer 2**

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

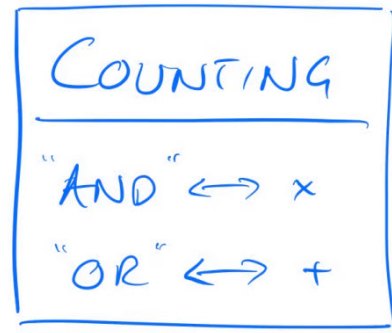
(a) Is Tracey correct?

You must give a reason for your answer.

MAIN COURSE AND DESSERT

SO SHE SHOULD MULTIPLY

NOT ADD. SO SHE'S WRONG.





**Answer 3**

Two of the men are to be chosen to make a pair to sing the second song.

Ben thinks the number of different pairs that can be chosen is 136

Mark thinks the number of different pairs that can be chosen is 272

- (b) Who is correct, Ben or Mark?  
Give a reason for your answer.

$$\begin{aligned} \text{No OF PAIRS} &= \frac{17 \times 16}{2} \\ &= \underline{\underline{136}} \end{aligned}$$

BEN IS CORRECT.

N.B.  
17 × 16 COUNTS  
EACH PAIR TWICE:  
"BEN, MARK" IS  
THE SAME AS  
"MARK, BEN"



**Answer 4**

Marie has 25 cards.  
Each card has a different symbol on it.

Marie gives one card to Shelley and one card to Pauline.

(a) In how many different ways can Marie do this?

$$\begin{array}{c} S \text{ AND } P \\ 25 \times 24 \\ \text{ONE FEWER CARDS} \end{array}$$

$$= \underline{\underline{600}}$$

COUNTING

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"AND"  $\leftrightarrow$   $\times$

"OR"  $\leftrightarrow$   $+$



**Answer 5**

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

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

$$\begin{aligned} \text{PICK TWO TEAMS} &= 12 \times 11 \\ &= \underline{132} \end{aligned}$$

BUT THIS COUNTS EACH PAIR/GAME TWICE  
IE A AND B OR B AND A

$$\begin{aligned} \text{So} \quad \text{NO OF GAMES} &= \frac{132}{2} \\ &= \underline{\underline{66}} \end{aligned}$$

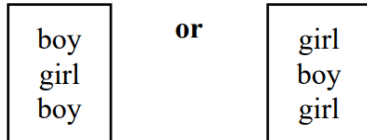


**Answer 6**

There are 12 boys and 10 girls in David's class.

David is going to pick three different students from his class and write their names in a list in order.

The order will be



(b) How many different lists can David write?

B AND G AND B OR G AND B AND G

$$12 \times 10 \times 11 + 10 \times 12 \times 9$$

*ONE FEWER BOY*                      *ONE FEWER GIRL*

$$= 1320 + 1080$$

$$= \underline{\underline{2400}}$$



**Answer 7**

There are 17 men and 26 women in a choir.  
The choir is going to sing at a concert.

One of the men and one of the women are going to be chosen to make a pair to sing the first song.

(a) Work out the number of different pairs that can be chosen.

EACH OF THE 17 MEN CAN BE PAIRED  
ANYONE OF THE 26 WOMEN:

$$\begin{aligned}\text{NO OF PAIRS} &= 17 \times 26 \\ &= \underline{\underline{442}}\end{aligned}$$