

Pearson/Edexcel Exam Questions

Q1. In a box there are three types of chocolates.

There are 6 plain chocolates, 8 milk chocolates and 10 white chocolates.

$$6 + 8 + 10 = 24$$

Ben takes at random a chocolate from the box.

(a) Write down the probability that Ben takes a plain chocolate.

$$P(\text{plain}) = \frac{6}{24} \text{ or } \frac{1}{4} \dots\dots\dots (2)$$

Deon takes 2 chocolates from the box.

(b) Write down all the possible combinations of types of chocolates that Deon can take.

PP, PM, PW, MM, ~~MP~~, MW, ww, ~~wp~~, ~~wm~~ (2)

Q2. Sally has three tiles.

Each tile has a different number on it.



Sally puts the three tiles down to make a number.
Each number is made with all three tiles.

1 2 3 2 1 3 3 1 2
1 3 2 2 3 1 3 2 1

How many different numbers can Sally make?

6 different ways

(2)

Q3. 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.

$$17 \times 26$$

$$\dots\dots\dots 442 \dots\dots\dots (2)$$

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

$$\frac{n}{17} \quad \frac{n}{16}$$

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

$$17 \times 16 = 272$$

but its actually $\frac{272}{2} = 136$ so Ben is correct

(1)

Q4. There are 14 boys and 12 girls in a class.

Work out the total number of ways that 1 boy and 1 girl can be chosen from the class.

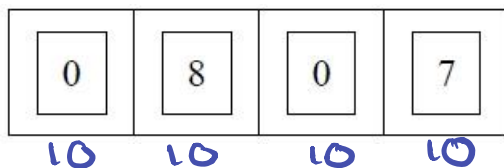
$$14 \times 12$$

$$\dots\dots\dots 168 \dots\dots\dots (2)$$

Q5. Pavel has a combination lock.

Pavel has to set each part of the lock to a digit between 0 and 9 inclusive. One possible way to do this is shown in the diagram.

10 ways



(a) How many different ways can Pavel do this?

$$10 \times 10 \times 10 \times 10 = 10,000$$

(2)

Pavel decides that the 1st and 3rd digits will be odd numbers and that the 2nd and 4th digits will be even numbers greater than 0.

(b) How many different ways are possible now?

odd even odd even
1 3 5 7 9 2 4 6 8 1 3 5 7 9 2 4 6 8
5 4 5 4

$$5 \times 4 \times 5 \times 4 = 400$$

(2)

Q6. Here are four cards. There is a number on each card.



(a) Write down the largest 4-digit even number that can be made using each card only once.

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5412

(2)

(b) Write down all the 2-digit numbers that can be made using these cards.

45 54 24 14  
42 52 25 15  
41 51 21 12

(2)

**Q7.** 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?

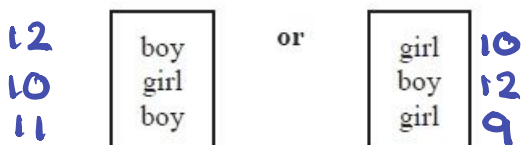
$$25 \times 24$$

600

(2)

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?

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

$$1320 + 1080$$

2400

(3)