

Counting problems (S UKMT)

These questions must be attempted without a calculator

Topics covered in the questions below may not necessarily be from the topic of the title.

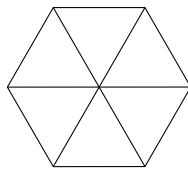
1. In a class of thirty pupils, there are twenty-two pupils who are right-handed and there are fourteen girls.

What is the smallest number of girls who could be right-handed?

A 0 B 2 C 4 D 6 E 8

2. The diagram shows a regular hexagon divided up into six equilateral triangles.

How many quadrilaterals are there in the diagram?



A 6 B 8 C 10 D 12 E 14

3. How many numbers from 12 to 12345 inclusive have digits which are consecutive and in increasing order, reading from left to right?

A 10 B 13 C 18 D 22 E 25

4. Given that January 1st, 2006 fell on a Sunday, which day of the week will occur most frequently in 2007?

A Monday B Tuesday C Wednesday D Thursday E Friday

5. The cards in a set of 36 are numbered 1 to 36. The cards are shuffled and four cards are dealt.

What are the chances of them being dealt in descending order?

A 1 in 2 B 1 in 8 C 1 in 16 D 1 in 24 E 1 in 36

6. How many whole numbers between 1 and 2007 are divisible by 2 but not by 7?

A 857 B 858 C 859 D 860 E 861

7. In how many different ways can I circle letters in the grid shown so that there is exactly one circled letter in each row and exactly one circled letter in each column?

A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y

A 15 B 24 C 60 D 100 E 120

