

**Handelskammaren**  
I sydsvenska företags intresse

**FINAL**

**Part 2 Time 30 min, 6 questions**

**Max. points: 12 (2 p/questions)**

**No calculators or rulers allowed.**

**Only your answers are required for this part. Leave these on one single sheet with your team's name on.**

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**Accident on the way to market**

A lady is on her way to the market with a wheelbarrow full of eggs. On the way, she knocks into a boy and all the eggs fall out. “How many eggs did you have in the wheelbarrow to start with?” asks the boy. The lady replies “I don’t remember, but I do remember that if I divided the eggs by 2, 3, 4, 5 or 6 then I always had one left over. But when I divided them by seven, there were none left over”.

What is the least number of eggs the lady could have had in her wheelbarrow?

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**Easy Number series**

Consider the following series of numbers:

**Row**

1	1, 1
2	8, 8, 8, 8
3	27, 27, 27, 27, 27, 27, 27, 27
4	64, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64, 64

What is the sum of row 8 divided by the sum of row 4?

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**Brilliant Balls**

There are red and blue balls in a bag. If you take out one ball, the probability that it is blue is  $\frac{3}{7}$ . If you swap 5 red balls for 5 blue balls, the probability that you take out a blue is instead  $\frac{4}{7}$ .

How many balls are there in the bag?

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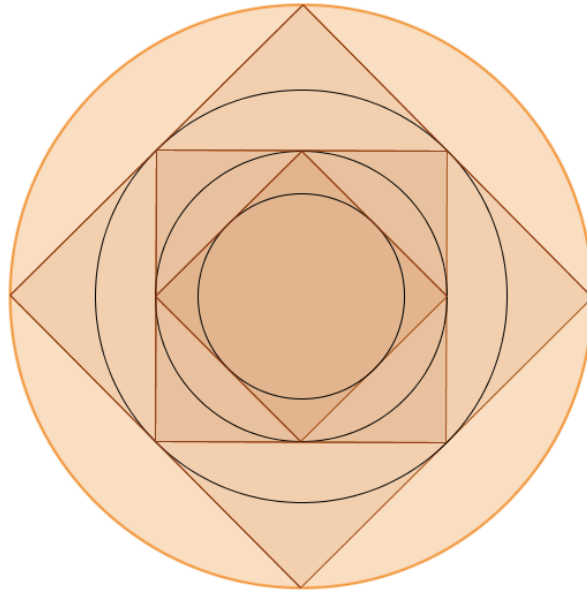
**Race**

Three runners, Ulf, Anna and Sam, run round a 500m track. They all start at the same time and keep a constant speed. How many laps will they have run the next time they all meet at the same place if Ulf, Anna and Sam's lap times are 55s, 66s, and 77s respectively?

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**Circles and squares**

If the outermost circle has a radius,  $r$ , what is the area of the innermost circle divided by the area of the outermost circle?



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**Probability**

I throw two dice. Calculate the positive difference of the two dice.

What is the probability (a) that I get a prime number? (b) that I get an even number? Which event is therefore more likely?