Countdown to your final Maths exam ... Part 1 (2018)

	Marks	Actual	😞 😐 🙂
Q1. Two-way tables / Frequency trees (Clip 1 & 2)	3		
Q2. Two-way tables / Frequency trees (Clip 1 & 2)	4		
Q3. Venn diagrams (Clip 53)	3		
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Q6. Venn diagrams (Clip 53)	4		
Q7. Product of prime factors (Clip 4)	3		
Q8. Multiples in context (Clip 6)	3		
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Q13. Exchange rates (Clip 8)	6		

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Questions

Q1. 100 adults were asked how they keep fit.

Each adult goes to the gym or runs or cycles.

45 of these adults are female.
30 of the 52 adults who go to the gym are female.
35 adults run.
9 males cycle.

How many females run?

(3)

Q2. 99 children each buy one drink.

They each buy cola or juice or water.

45 of these children are girls.
25 boys buy cola.
16 girls buy juice.
17 of the 37 children who buy water are boys.

Work out the number of children who buy cola.

(4)

Q3. The universal set = $\{22, 23, 24, 25, 26, 27, 28. 29, 30\}$
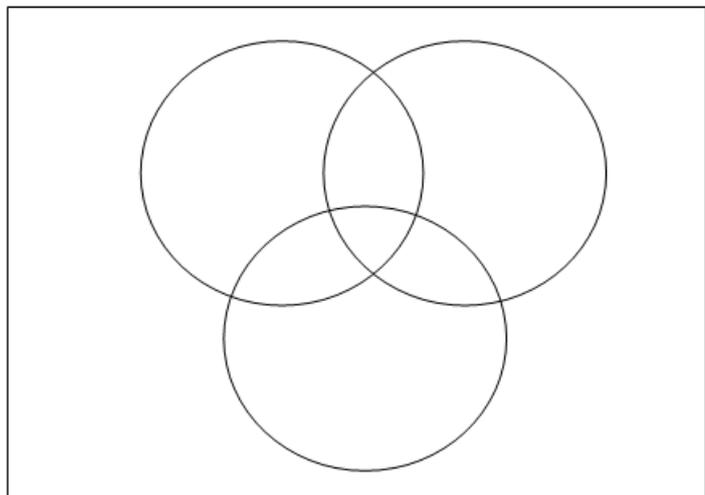
Within this universal set
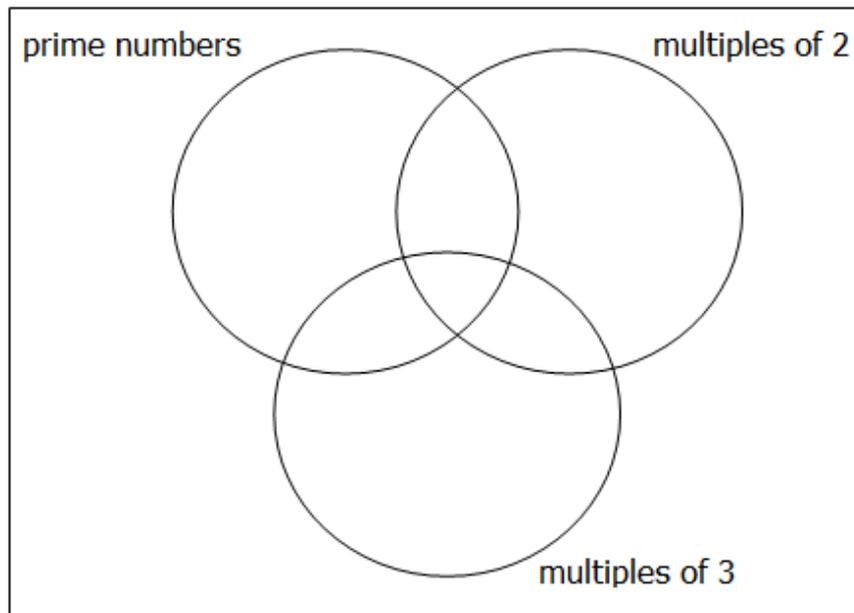   Set A is the multiples of 2
    Set B is the multiples of 4
    Set C is the multiples of 5

Complete the Venn Diagram

(3)

Q4. a) Place each of the whole numbers 42, 43, 44, 45, 46, 47, 48, 49 and 50 in the correct positions in the Venn diagram.

(3)

b) A whole number is selected at random from the set $\{42, 43, 44, 45, 46, 47, 48. 49, 50\}$

Find the probability that the number selected is:

A prime number ....

Not a prime number ....

A prime number that is also a multiple of 3 ....

(3)

Q5. Write down an example to show that each of the following statements is **not** correct.

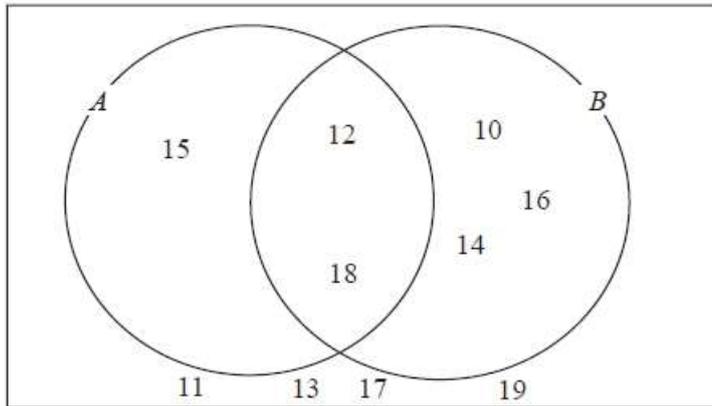(a) The sum of an odd number and an even number is even.

(1)

(b) The product of two prime numbers is never even.

(1)

(c) When you square an integer the result is always an even integer.

(1)

Q6. Here is a Venn diagram.

(a) Write down the numbers that are in set

(i) $A \cup B$ ....

(ii) $A \cap B$ ....

(2)

One of the numbers in the diagram is chosen at random.

(b) Find the probability that the number is in set A'

(2)

Q7. Write 360 as a product of its prime factors.

(3)

Q8. Tom and Amy set the alarms on their phones to sound at 6.45 am.

Both alarms sound together at 6.45 am.
Tom's alarm then sounds every 9 minutes.
Amy's alarm then sounds every 12 minutes.

At what time will both alarms next sound together?

(3)

Q9. Find the Lowest Common Multiple (LCM) of 8 and 12

(2)

Q10. Grant drives a lorry to deliver some equipment from a factory to a hospital.

The distance from the factory to the hospital is 200 miles.

The lorry uses one litre of fuel to go 5 miles.
A litre of fuel for the lorry costs £1.50

Work out the total cost of the fuel the lorry used.

(3)

Q11. Miss Paisley is organising games for the children in her class.

She is going to put the children into teams.

If she puts the children into teams of 4, there will be 2 children left out.
If she puts the children into teams of 5, there will be 3 children left out.

Work out the smallest possible number of children in Miss Paisley's class.

(3)

Q12. Lois lives in Llandudno. She is changing some pounds into other currencies before going on holiday to Europe.

The exchange rates are displayed below:

Exchange £1 for	
1.48 SF	Swiss Francs
1.2 €	Euros
5.04 Zl	Polish zloty

a) Calculate how much Loise would receive in exchanging each of the following
   i)   £450 exchanged for Swiss francs

(2)

   ii) £300 exchanged for Polish zloty

(2)

   iii) How many pounds will Lois have to exchange to receive 363.69 euros?

(2)

Q13. Ewan is going on holiday to India. He has saved £450 to exchange for Indian rupees.

a) The exchange rate on the internet last week was £1 = 99.40 rupees. Had Ewan been going on holiday last week. How many rupees could he have bought?

<div align="right">(2)</div>

b) Ewan exchanged his money on arrival in India. The exchange rate is now £1 = 99.72 rupees.

The exchange bureau only has 500 rupee notes.
Eqan wants to buy as many rupees as possible with his £450 savings.

How much of his £450 will Ewan spend buying rupees?
Give your answer correct to the nearest penny.

<div align="right">(4)</div>