Quiz 2009

Round 1 : General Knowledge

	Question
1)	What organisation uses the motto Fidelity, Bravery, Integrity?
2)	Which Irish actor won the Golden Globe Award 2009 for the 'Best Performance by an Actor in a Motion Picture (Musical or Comedy)'?
3)	Who shot the outlaw Jesse James?
4)	In what year was the GAA founded?
5)	What is the name of the teenage criminal mastermind, the hero of the Eoin Colfer series of novels?
6)	Who is the State Pathologist?
7)	To whom is Carla Bruni married?
8)	In "The Lord of the Rings", how many rings are there "for the dwarf-lords in their halls of Stone"?

Round 2 : Maths

	Question
1)	What is the next number in the series 3, 9 , 16, 24, 33, 43 …..?
2)	At what value of x between 0° and 90° does Sin x * Cos x have a maximum value?

3)	Your maths class has 10 students.
	
	          2 students are 1.6 m tall
	
	          4 are 1.65 m tall
	
	          3 are 1.7 m tall
	
	          1 is 1.8 m tall.
	
	What is the average height of the students?

4)	A farmer ploughs 1.5 hectares per hour for 4 hours in the morning. In the afternoon he works another 4 hours. In the whole day he ploughs an average of 1.8 hectares per hour. What is his average ploughing rate in the afternoon?
5)	Express the decimal number 201 in binary.
6)	It takes twice as long to iron a shirt as a pair of trousers. In an hour you iron twice as many shirts as trousers. A total of 9 objects are ironed. How long does it take to iron a shirt?
7)	The blades of a wind generator are 50 metres long. How fast is the blade tip moving (in km per hour) if the blades are turning at 15 revolutions per minute?
8)	A grandfather is 30 years older than his son, who in turn is 30 years older than his son. All of their ages add up to 99 years. How old is the grandfather?

Round 3 : Science and Engineering

	Question
1)	What is the name of the antiparticle of the electron?
2)	The LHC in CERN is the most expensive physics experiment ever undertaken. What does LHC stand for?
3)	Which of the following isn't one of the fundamental forces of nature (i) electromagnetic (ii) elastic (iii) weak (iv) gravitation?
4)	A guitar string is stretched between supports 0.65m apart. The string is vibrating at its first harmonic. The speed of sound is 500 ms^{-1}. What is the frequency of vibration of the string?
5)	At room temperature the thermistor has a resistance of 500Ω. At room temperature calculate the current flowing through the 750Ω resistor.
6)	If the current in an heater wire is doubled, assuming it is independent of temperature,by how much will the energy delivered by the heater in a set time interval change ?
7)	What popular sports wear brand associated with surfing is another name for a metal ?
8)	Who famously said " I do not believe that God plays dice " ?

Round 4 : Picture Round

	Question
1)	Name this sleeping man: -
2)	Name the sportsman indicated by the arrow: -
3)	Name this duo: -

4)	Name this sportsman: -
5)	Name this actor: -
6)	Name this politician: -

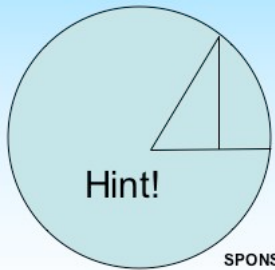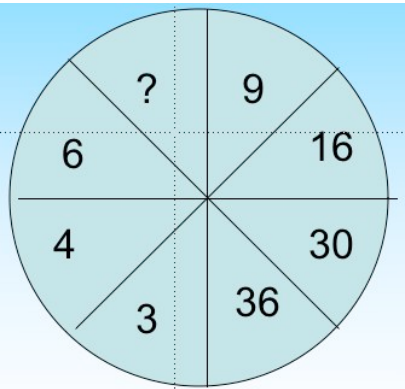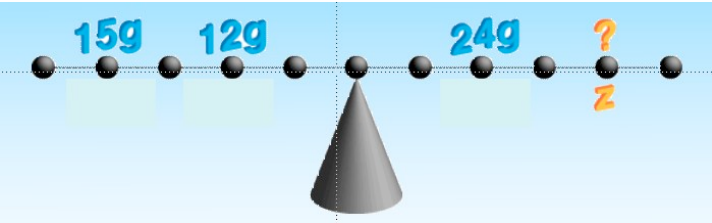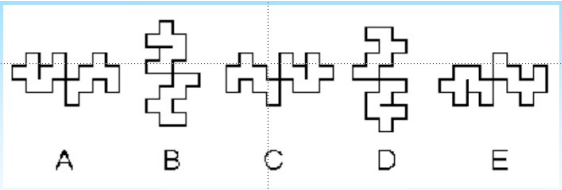|	
7)	Name the actor holding the pistol : -
8)	Name this man: -
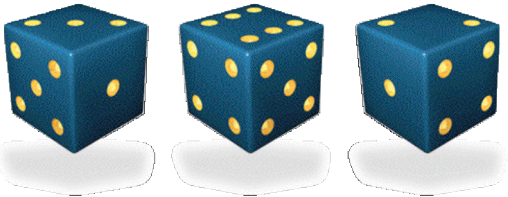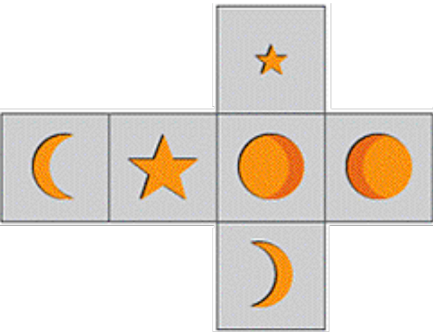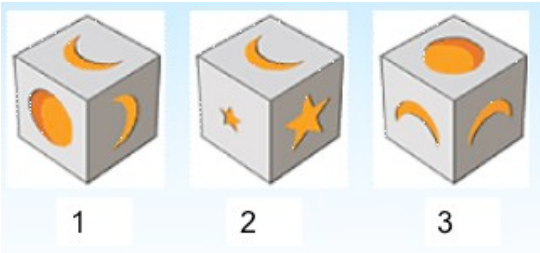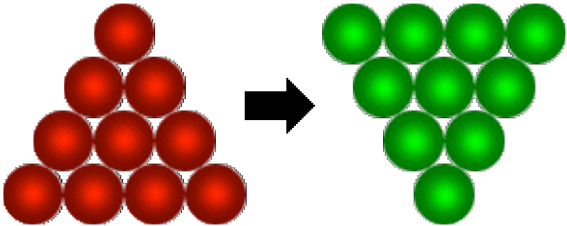
Round 5 : Maths

	Question
1)	What is the maximum number of great-great-great-grandparents you can have?
2)	If you throw 2 dice what is the chance that you will score 5?
3)	48 players enter a knock-out table tennis championship. How many games are needed to select a singles champion?
4)	If 2 is the first prime number, what is the sum of the first 9 prime numbers?
5)	Evaluate X if: $$X = 1/(\cos(20°)) – \tan(20°)$$
6)	Evaluate - $\log_{10}2 + \log_{10}5 + \log_{10}8 + \log_{10}5 + \log_{10}10 - \log_{10}4$
7)	Find a fraction such that: If 1 is added to the numerator, it is equal to 2/3. If 1 is added to the denominator, it is equal to 1/2.
8)	It takes 3 men 3 days to dig 3 holes. How many men will it take to dig 10 holes in 10 days?

Round 6 : Science and Engineering

	Question
1)	Name the metal which has the symbol W on the periodic table of the elements and is commonly used in the manufacture of light bulbs.
2)	What happens to the resistance of a piece of pure semiconductor material when heated ?
3)	Which of the following is not a wireless transmission protocol ?
4)	500g of water is placed in an electric kettle. The temperature of the water is 15 degrees C. The power rating of the kettle is 3kW. Calculate the energy required to raise the water temperature to 100 degrees C. (specific heat capacity of water = 4200 J kg^{-1} K^{-1})
5)	In an experiment a coil of wire is connected in series to an ammeter and an AC power supply. If a metal core is placed in the centre of the coil what will happen to the current in the circuit?
6)	The plates of an air filled parallel plate capacitor have an area of 50 cm^2 and are 1 cm apart. The capacitor is connected to a 10V d.c. supply. Calculate the capacitance of the capacitor. (permittivity of free space = 8.85 _ 10^{-12} F m^{-1})
7)	The musical note standard A is what frequency? (i) 512 Hz (ii). 278 Hz (iii). 440 Hz iv. (iv) 1000 Hz
8)	Name Ireland's only recipient of the Nobel prize for Physics.

Round 7 : Maths Pictures

	Question
1)	Below are three identical dice in three different positions. What number is on the opposite side of the 4?
2)	Which cube can be constructed by folding the flat cut-out?
3)	What is the minimum number of red balls that must be moved in order to construct the green shape?
4)	Evaluate

$$\int_0^\pi \left(3 - \cos^5 x\right) dx$$

5)	Place in order of increasing magnitude when x = 1 radian: x, sin(x), tan(x) Hint! SPONS
6)	Insert the missing number. ? 9 6 16 4 30 3 36
7)	What value should be placed at Z to balance the scale? 15g 12g 24g ? Z
8)	Which of the following figures is the odd one out? A B C D E

Round 8 : General Knowledge

	Question
1)	Which animal produces cashmere wool?
2)	Which vitamin are carrots particularly rich in?
3)	Where is the sea of storms?
4)	What is the more common name for the Clavicle?
5)	What famous pop singer has the birth names "Florian Cloud de Bounevialle Armstrong"?
6)	What city in Ireland is served by Colbert railway station?
7)	In which book of the Bible is the story of the Great Flood?
8)	What was the title of the first Harry Potter book?

Quiz Answers

Round 1 : General Knowledge

	Question	Answer
1)	What organisation uses the motto Fidelity, Bravery, Integrity?	FBI
2)	Which Irish actor won the Golden Globe Award 2009 for the 'Best Performance by an Actor in a Motion Picture (Musical or Comedy)'?	Colin Farrell
3)	Who shot the outlaw Jesse James?	The Coward Robert Ford
4)	In what year was the GAA founded?	1884 (125 years ago!)
5)	What is the name of the teenage criminal mastermind, the hero of the Eoin Colfer series of novels?	Artemis Fowl
6)	Who is the State Pathologist?	Dr Marie Cassidy
7)	To whom is Carla Bruni married?	Nicholas Sarkozy
8)	In "The Lord of the Rings", how many rings are there "for the dwarf-lords in their halls of Stone"?	Seven

Round 2 : Maths

	Question	Answer
1)	What is the next number in the series 3, 9 , 16, 24, 33, 43 …..?	54
2)	At what value of x between 0° and 90° does Sin x * Cos x have a maximum value?	45°
3)	Your maths class has 10 students. 2 students are 1.6 m tall 4 are 1.65 m tall 3 are 1.7 m tall 1 is 1.8 m tall. What is the average height of the students?	1.67m
4)	A farmer ploughs 1.5 hectares per hour for 4 hours in the morning. In the afternoon he works another 4 hours. In the whole day he ploughs an average of 1.8 hectares per hour. What is his average ploughing rate in the afternoon?	2.1 hectares per hour
5)	Express the decimal number 201 in binary.	1100 1001
6)	It takes twice as long to iron a shirt as a pair of trousers. In an hour you iron twice as many shirts as trousers. A total of 9 objects are ironed. How long does it take to iron a shirt?	8 minutes
7)	The blades of a wind generator are 50 metres long. How fast is the blade tip moving (in km per hour) if the blades are turning at 15 revolutions per minute?	283 km/hr
8)	A grandfather is 30 years older than his son, who in turn is 30 years older than his son. All of their ages add up to 99 years. How old is the grandfather?	63 years

Round 3 : Science and Engineering

	Question	Answer
1)	What is the name of the antiparticle of the electron?	The positron
2)	The LHC in CERN is the most expensive physics experiment ever undertaken. What does LHC stand for?	Large Hadron Collider
3)	Which of the following isn't one of the fundamental forces of nature (i) electromagnetic (ii) elastic (iii) weak (iv) gravitation?	(ii) elastic
4)	A guitar string is stretched between supports 0.65m apart. The string is vibrating at its first harmonic. The speed of sound is 500 ms^{-1}. What is the frequency of vibration of the string?	384.6 Hz
5)	At room temperature the thermistor has a resistance of 500Ω. At room temperature calculate the current flowing through the 750Ω resistor.	0.004 A
6)	If the current in an heater wire is doubled, assuming it is independent of temperature,by how much will the energy delivered by the heater in a set time interval change ?	The energy will increase by a factor of 4.
7)	What popular sports wear brand associated with surfing is another name for a metal ?	Quicksilver
8)	Who famously said " I do not believe that God plays dice " ?	Albert Einstein

Round 4 : Picture Round

	Question	Answer
1)	Name this sleeping man: -	Chris Martin (Coldplay)
2)	Name the sportsman indicated by the arrow: -	Doug Howlett (Rugby)
3)	Name this duo: -	Kylie Minogue & David Tennant

4)	Name this sportsman: -	Robbie Keane
5)	Name this actor: -	Brad Pitt
6)	Name this politician: -	Batt O'Keffee (Minister for Education & Science)

7)	Name the actor holding the pistol : - 	Viggo Mortensen
8)	Name this man: - 	Bill Gates (Microsoft)
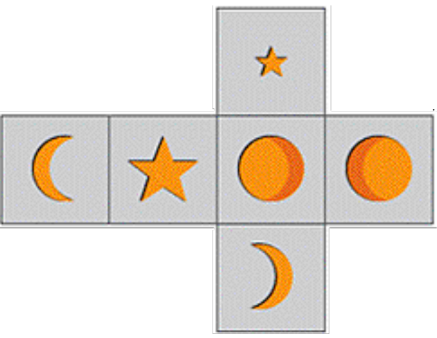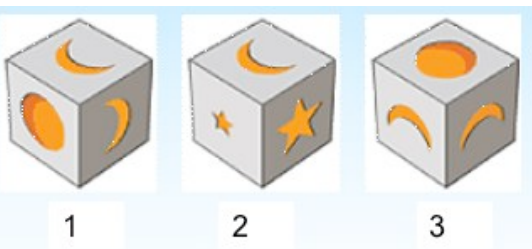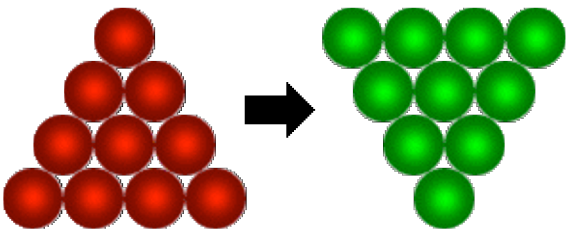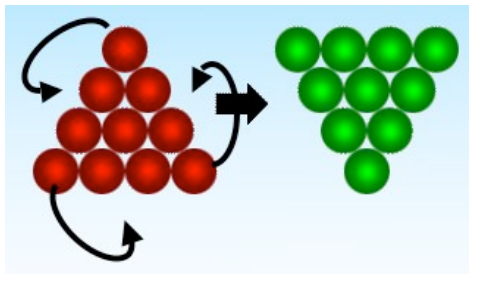
Round 5 : Maths

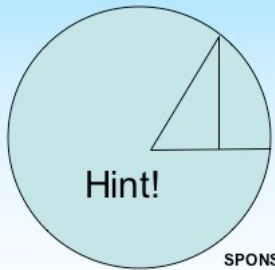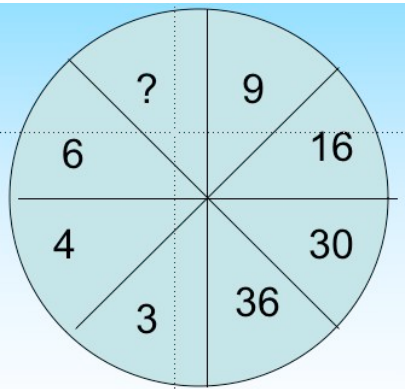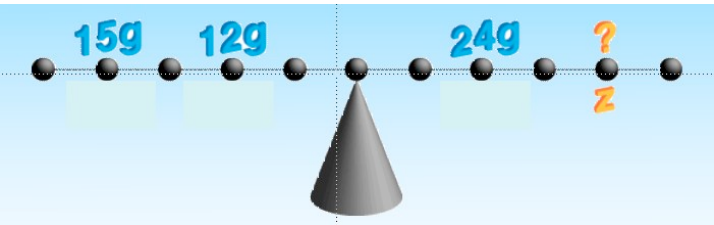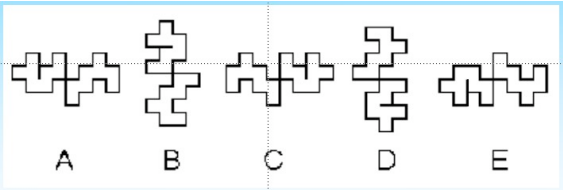|	Question	Answer
1)	What is the maximum number of great-great-great-grandparents you can have?	32
2)	If you throw 2 dice what is the chance that you will score 5?	1/9 or 4/36
3)	48 players enter a knock-out table tennis championship. How many games are needed to select a singles champion?	47 (1 player is knocked out in each game and 47 need to be knocked out)
4)	If 2 is the first prime number, what is the sum of the first 9 prime numbers?	100= 2+3+5+7+11+13+17+19+23
5)	Evaluate X if: $X = 1/(\cos(20°)) - \tan(20°)$	x=1
6)	Evaluate - $\log_{10}2 + \log_{10}5 + \log_{10}8 + \log_{10}5 + \log_{10}10 - \log_{10}4$	3
7)	Find a fraction such that: If 1 is added to the numerator, it is equal to 2/3. If 1 is added to the denominator, it is equal to 1/2.	5/9 (5+1)/9 = 2/3 and 5/(9+1) =1/2
8)	It takes 3 men 3 days to dig 3 holes. How many men will it take to dig 10 holes in 10 days?	3

Round 6 : Science and Engineering

	Question	Answer
1)	Name the metal which has the symbol W on the periodic table of the elements and is commonly used in the manufacture of light bulbs.	Tungsten
2)	What happens to the resistance of a piece of pure semiconductor material when heated ?	It decreases
3)	Which of the following is not a wireless transmission protocol ?	Blu-Ray
4)	500g of water is placed in an electric kettle. The temperature of the water is 15 degrees C. The power rating of the kettle is 3kW. Calculate the energy required to raise the water temperature to 100 degrees C. (specific heat capacity of water = 4200 J $kg^{-1} K^{-1}$)	178500 Joules
5)	In an experiment a coil of wire is connected in series to an ammeter and an AC power supply. If a metal core is placed in the centre of the coil what will happen to the current in the circuit?	It will decrease.
6)	The plates of an air filled parallel plate capacitor have an area of 50 cm^2 and are 1 cm apart. The capacitor is connected to a 10V d.c. supply. Calculate the capacitance of the capacitor. (permittivity of free space = 8.85 _ 10^{-12} F m^{-1})	4.425 x 10^{-12} F
7)	The musical note standard A is what frequency? (ii) 512 Hz (ii). 278 Hz (iii). 440 Hz iv. (iv) 1000 Hz	(iii) 440 Hz
8)	Name Ireland's only recipient of the Nobel prize for Physics.	Ernest Walton

Round 7 : Maths Pictures

	Question	Answer
1)	Below are three identical dice in three d i f f e r e n t p o s i t i o n s . What number is on the opposite side of the 4?	3
2)	Which cube can be constructed by folding the flat cut-out?	3
3)	What is the minimum number of red balls that must be moved in order to construct the green shape?	3
4)	Evaluate	3π

	$$\int\limits_{0}^{\pi}\left(3-\cos^{5}x\right)dx$$	
5)	Place in order of increasing magnitude when x = 1 radian: x, sin(x), tan(x) Hint! SPONS	sin(x), x, tan(x)
6)	Insert the missing number. ? 9 6 16 4 30 3 36	6 (=1/6*36)
7)	What value should be placed at Z to balance the scale? 15g 12g 24g ? Z	9g
8)	Which of the following figures is the odd one out? A B C D E	A

Round 8 : General Knowledge

	Question	Answer
1)	Which animal produces cashmere wool?	Goat
2)	Which vitamin are carrots particularly rich in?	Vitamin A
3)	Where is the sea of storms?	On the moon
4)	What is the more common name for the Clavicle?	Collar Bone
5)	What famous pop singer has the birth names "Florian Cloud de Bounevialle Armstrong"??	Dido
6)	What city in Ireland is served by Colbert railway station?	Limerick
7)	In which book of the Bible is the story of the Great Flood?	Genesis
8)	What was the title of the first Harry Potter book?	Harry Potter and the Philosopher's Stone