Two friends, Bob and Fred, stand at a cross roads. Bob walks east and Fred walks north. They walk at the same speed. Bob walks 4 miles in 48 minutes and stops. Fred walks 3 miles at the same speed as Bob and stops. Later that day they walk directly towards each other at the same speed as before, leaving at the same time as each other. How long after they start walking do the meet?	A clock loses 10 minutes an hour due to a technical fault. At 3pm Jim checks his trusty watch and sets the clock to exactly 3pm. He returns sometime later to read the clock. The time shown on the clock is 2:15am. What time does Jim's trusty watch read when the clock reads 2:15am?	A teacher asks a pupil to add the following numbers together without using a calculator and put their answer as a 'normal number' instead of a fraction in the box provided: $16, 8, 4, 2, 1, \dfrac{1}{2}, \dfrac{1}{4}, \dfrac{1}{8}, \dfrac{1}{16}, \dfrac{1}{32}, \dfrac{1}{64},$ $\dfrac{1}{128}, \dfrac{1}{256}, \dfrac{1}{512}, \dfrac{1}{1024}, \dfrac{1}{2048}, \dfrac{1}{4096},$ $\dfrac{1}{8192}, \dfrac{1}{16384}, \dfrac{1}{32768}, \dfrac{1}{65536}$ Answer box: What is the minimum amount of numbers the student will need to add to satisfy the teacher's request?	The starter of the mixed ability running race at the Olympics pulls the trigger and the athletes get away around the 400m track. The athlete in lane 1 is superhuman and takes 30 seconds to complete a lap. The athlete in lane 2 takes 3 minutes, the elderly tortoise in lane 3 takes 12 minutes. The speedy runner in lane 4 takes 90 seconds, the old man in lane 5 takes 8 minutes and finally the slightly younger man in lane 6 takes 6 minutes. The starter fell asleep as soon as the gun went off. He was woken up to be told it was a photo finish and the athletes couldn't be split. Find the least number of meters run by any athlete in the race.	The square ABCD is shown below where $AC = \sqrt{2}$ m The area of region R is given to be 40% of the area of Triangle ACD. Find the area of the region R, giving your answer in cm² **(NOT drawn to scale)**
Did I crack this one? yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □
There are 3 possible outcomes in a trial, A, B and C. The probability of A is ¼ **of** the probability of B which in turn is ½ **of** the probability of C. If the event is carried out 390 times how many times would you expect the outcome to be A?	Angle x is at the centre of the circle, the radius of the circle is 4cm and the shaded sector has an area of 2πcm². Find the size of angle y **(NOT drawn to scale)**	A number sequence is given as 2, -2, 4, -4, 8,-8, 16, -16…..and so on. What is the minimum number of terms in the sequence required to ensure the sum of the sequence exceeds 5000?	10 years ago Pete was 3 times older than his son Paul. Their combined age now is 64. How old was Pete 20 years ago?	At a family party the ratio of Kids to Adults is 3:7. The ratio of Adults to OAPs is 2:5. There are 105 OAPs at the party. Find the difference in the number of adults and children at the party.
Did I crack this one? yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □
A and B are two different prime integers. Their sum is less than 25. The sum of their squares is less than 200 and their product is greater than 80. Find the difference between A and B.	A clock face has been swapped for a face showing degrees instead of hours and minutes. Ant X is standing on the clock where the face reads 294°. Ant Z is standing on the clock where the face reads 108° Given the clock should read hours and minutes, how many minutes are there between the two ants when reading the clock anticlockwise?	The Venn diagrams shows to probabilities of events A, B and C. Given the probability of A is 0.5, the probability of B is 0.5 and the probability of C is 0.4. Complete the Venn Diagram 	Consider the two numbers x and y. Their product is smaller than both numbers, their quotient larger than both numbers. Their sum, different, product and quotient are never negative. Find the maximum possible difference between the numbers x and y.	Sue has sat 7 of her 10 final school exams so far. Each is marked out of 100 and her scores have been 56,74,49,62,63,77 and 51. Sue needs to average 60 marks per test to get into university. She is ill for the 8th test and misses the chance to sit it. What is the lowest score she can get in the 9th test to still be in with a chance of getting to university going into the final exam?
Did I crack this one? yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □	*Did I crack this one?* yes □ no □