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:

\[
\begin{array}{cccccccc}
&16&8&4&2&1&1&1 \\
1&2&4&8&16&32&64 \\
0&128&256&512&1024&2048&4096 \\
1&8192&16384&32768&65536 \\
\end{array}
\]

The square ABCD is shown below. The area of triangle ACD is given to be \( \sqrt{2} \) m²

A number sequence is given as \( 2, -2, 4, -4, 8, -8, 16, -16, \ldots \) and so on.

What is the minimum number of terms in the sequence required to ensure the sum of the sequence exceeds 5000?

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.

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.