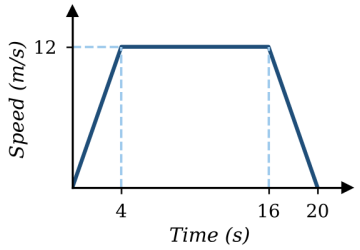
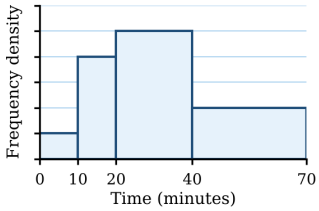
Day 313	S Tier 10-a-day
1 A red light flashes every 4 minutes. A blue light flashes every 6 minutes. A green light flashes every 7 minutes. They all flash together at 10:00 am. (a) At what time do they next flash together?	
2 Factorise $6x^2 + 23x + 21$	
3 Here are six numbers. $\sqrt{0.25}$, $3 + \sqrt{12}$, $\sqrt[3]{27}$, $\sqrt{2} + \sqrt{8}$, $\pi \div 2$, $\frac{\sqrt{18}}{\sqrt{2}}$ Write down the irrational numbers.	
4 Isla and Tariq live 260 km apart. At 10:00 they set off towards each other on the same road. Isla drives at 45 km/h and Tariq drives at 85 km/h. (a) At what time do they meet? (b) How far from Isla's home do they meet?	
5 The graph shows the speed of a train between two stations. (a) Work out the acceleration in the first 4 seconds. (b) Work out the total distance. 	

Day 313	S Tier 10-a-day
6 In a coach, the ratio of the number of adults to the number of children is 7 : 5. Then 5 more adults are added and 17 children are removed. The ratio is now 2 : 1. How many adults were there at the start?	
7 A is the point (0, −4) and B is the point (2, −12). Find an equation of the perpendicular bisector of AB. Give your answer in the form ax + by = c, where a, b and c are integers.	
8 The histogram shows the times of people spent waiting at a clinic. 120 of them had a time between 40 and 70 minutes. (a) How many had a time between 20 and 40 minutes? (b) How many people are there in total? 	
9 The HCF of two numbers is 5 and their LCM is 225. One of the numbers is 45. Work out the other number.	
10 ABCD is a rectangle with AB = 4 cm and AD = 7 cm. A point P inside the rectangle is such that AP ≤ 4 cm and P is nearer to A than to B. Work out the area of the region in which P can lie. Give your answer in terms of π and surds.	