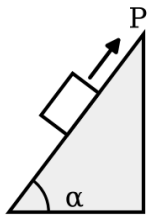
Day 247	A Level Maths: C Tier 10-a-day
1 $x_{n+1} = \frac{2}{x_n^2 + 1} + 1$, with $x_0 = 1$. Find x_1, x_2 and x_3 to 3 decimal places.	
2 Of 140 people, 90 are girls. 51 of the girls and 31 of the boys walk to work. One person is chosen at random. Given that the person walks to work, find the probability they are a girl.	
3 Evaluate $\sum_{r=1}^{7} (4r + 6)$.	
4 Use the trapezium rule with 5 strips to estimate $\int_0^2 e^{\frac{x^2}{2}}\, dx$, giving your answer to 3 significant figures.	
5 $P(A \cap B) = 0.07$ and $P(B) = 0.7$. Find $P(A \mid B)$.	

Day 247 **A Level Maths: C Tier 10-a-day**

6 A particle of mass 26 kg rests on a smooth plane inclined at α to the horizontal, where tan $\alpha = \frac{4}{3}$.
It is held by a force P N up the slope. Take g = 9.8 m s^{-2}. Find P and the normal reaction.



7 Solve $-x^2 + 9 > 0$.

8 $\frac{5x + 9}{(x + 3)(x + 1)} \equiv \frac{A}{x + 3} + \frac{B}{x + 1}$.
Find A and B, and hence find $\int \frac{5x + 9}{(x + 3)(x + 1)}\,dx$.

9 An arithmetic sequence begins 1, −3, −7, −11, ...
Find (a) an expression for the nth term,
(b) the 17th term.

10 A particle is in equilibrium under the three forces shown. cos α = $\frac{4}{5}$. Find P and Q.

