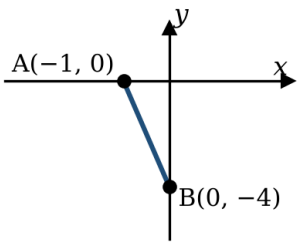
Day 70	A Level Maths: C Tier 10-a-day
1 A car decelerates uniformly from 10 m s^{-1} to rest in 4 s. Find (a) the deceleration, (b) the distance travelled while decelerating.	
2 $f(x) = (x - 3)^2 - 6$, $x \geq 0$. Find the range of f.	
3 Solve $\sin(x - 20°) = -\frac{\sqrt{2}}{2}$ for $0° \leq x \leq 360°$.	
4 P(A) = 0.3, P(B) = 0.5 and $P(A \cap B) = 0.15$. (a) Find $P(A \mid B)$. (b) Are A and B independent? Give a reason.	
5 $f(x) = x^2 - 7$. Use the Newton-Raphson method with $x_0 = 3$ to find x_1, giving your answer to 3 decimal places.	

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6 Find the range of values of k for which $kx^2 + 6x + 3 = 0$ has real roots.

7 A car of mass 1000 kg tows a caravan of mass 500 kg on a level road with acceleration 0.5 m s^{-2}. Resistances: 400 N on the car, 100 N on the caravan. Find the driving force and the tow bar tension.

8 The diagram shows a line meeting the axes at A and B.
Find (a) the equation of AB in the form $px + qy = r$ with integers p, q and r, (b) the length AB.



9 Solve $-2\sin^2 x - \cos x + 2 = 0$
for $0° \leq x \leq 360°$.

10 In a histogram, the class 10 to 30 has frequency 60 and is drawn with a bar of height 3 cm.
The class 30 to 35 has frequency 25. Find the height of its bar.