Day 349	A Level Maths: C Tier 10-a-day

1 (a) Convert $\frac{7\pi}{6}$ radians to degrees.

(b) Convert 40° to radians, giving your answer in terms of π.

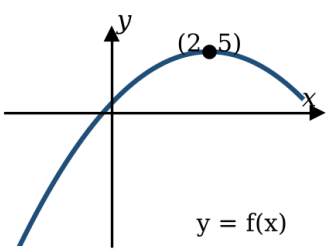
2 Simplify $(3x^4)^3 \div 9x^4$.

3 Find $\int e^{4x+1}\,dx$.

4 A resultant force of 32 N gives a body an acceleration of 4 m s^{-2}. Find the mass of the body.

5 The diagram shows the curve y = f(x). The maximum point is shown. Write down the coordinates of the maximum point on the curve with equation

(a) y = f(x) − 2 (b) y = f(2x)

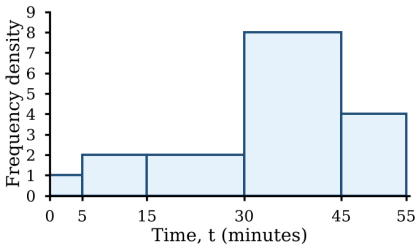


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6 The table shows grouped data.
Class: $0 \leq x < 10$; $10 \leq x < 20$; $20 \leq x < 30$; $30 \leq x < 40$
Frequency: 15, 4, 14, 7
Estimate the median, to 3 s.f.

7 When $x^3 + kx^2 + 5x - 8$ is divided by $(x - 3)$, the remainder is -2. Find the value of k.

8 The histogram shows the times, t minutes, taken by some people to complete a puzzle.
Find the number of people who took between 0 and 5 minutes.



9 Solve $\tan x = \frac{\sqrt{3}}{3}$ for $0 \leq x \leq 2\pi$.
Give your answers in terms of π.

10 A particle moves in a straight line with velocity $v = (9t^2 + 2t + 8)$ m s^{-1} at time t seconds.
Find the distance travelled between $t = 3$ and $t = 4$ (the particle does not turn round).