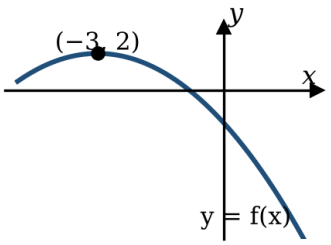
**Day 328** **A Level Maths: C Tier 10-a-day**

**1** 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) − 1 (b) y = −f(x)

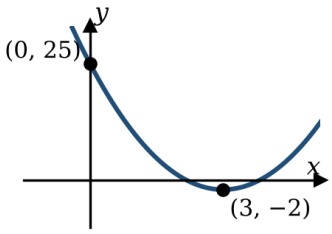



**2** The curve $y = ab^x$ passes through (0, 6) and (4, 96).
Find the values of a and b.

**3** Here are 7 values: 11, 2, 4, 10, 6, 3, 10
Find the mean and the standard deviation, to 3 s.f.

**4** A resultant force of 40 N gives a body an acceleration of 2 m $s^{-2}$. Find the mass of the body.

**5** A(0, 2), B(2, 4) and C(7, 9).
Show that A, B and C are collinear and find AB : BC.

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|---|---|
| **6** A car of mass 800 kg tows a caravan of mass 500 kg on a level road with acceleration 0.25 m $s^{-2}$. Resistances: 400 N on the car, 150 N on the caravan. Find the driving force and the tow bar tension. | |
| **7** $f(x) = x^3 - x - 4$.<br>Use the Newton-Raphson method with $x_0 = 3$ to find $x_1$,<br>giving your answer to 3 decimal places. | |
| **8** Find the set of values of x satisfying both<br>$2x + 5 > -3$ and $x^2 + 9x + 18 < 0$. | |
| **9** P(A) = 0.2, P(B) = 0.3 and $P(A \cap B) = 0.03$.<br>(a) Find P(A \| B).<br>(b) Are A and B independent? Give a reason. | |
| **10** The diagram shows a sketch of a quadratic curve.<br>Find its equation in the form $y = a(x - p)^2 + q$.<br> | |