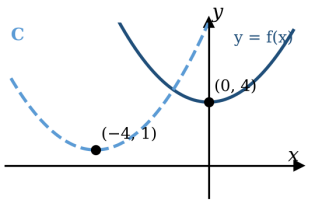
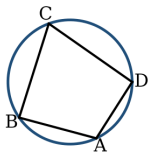
Day 287 **IGCSE 10-a-day**

1 The diagram shows the graph of y = f(x) with a minimum point at (0, 4).
The dashed curve C is the image of y = f(x) after a translation.
The minimum point of C is (−4, 1).
Write down the equation of C in terms of f.



2 y = x(x + 4)(x − 1)
Find $\frac{dy}{dx}$.

3 A, B, C and D are points on a circle. Angle DAB = (4x − 20)°, angle BCD = (5x − 7)° and angle ABC = (3x − 15)°.
(a) Work out the value of x.
(b) Work out the size of angle ADC.
The diagram is not drawn accurately.

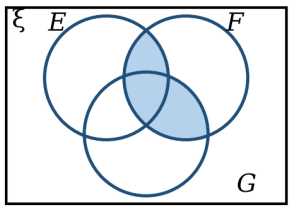


4 The equation of a curve is $y = -2x^{3/2} - 4x + 2\sqrt{x}$.
Work out the gradient of the curve at the point where x = 16.

5 a = 0.92 and b = 0.27,
both correct to 2 decimal places.
Work out the upper bound of a × b.

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6 Write down the set notation for the region shaded in the Venn diagram.



7 A point A is on level ground in line with the base of a cliff. (Calculator)
The angle of elevation of the top of the cliff from A is 38°.
B is a point on the same line, 80 m further from the cliff than A.
The angle of elevation of the top of the cliff from B is 25°.
Work out the height of the cliff. Give your answer to 1 decimal place.

8 $y = x + \frac{9}{x}$
Find the values of x for which y is increasing.

9 Simplify fully $\frac{x^2 - 10x + 24}{x^2 + 2x} \times \frac{x^2 - 3x}{x - 4}$

10 Liam invested £16,000 in a savings account for 3 years.
Compound interest was paid at a fixed rate per year.
At the end of the 3 years the account held £18,522.
Work out the annual rate of interest.
(Calculator)