



AQA Qualifications

AQA Level 2 Certificate

FURTHER MATHEMATICS

Level 2 (8365)

Miscellaneous Worksheet

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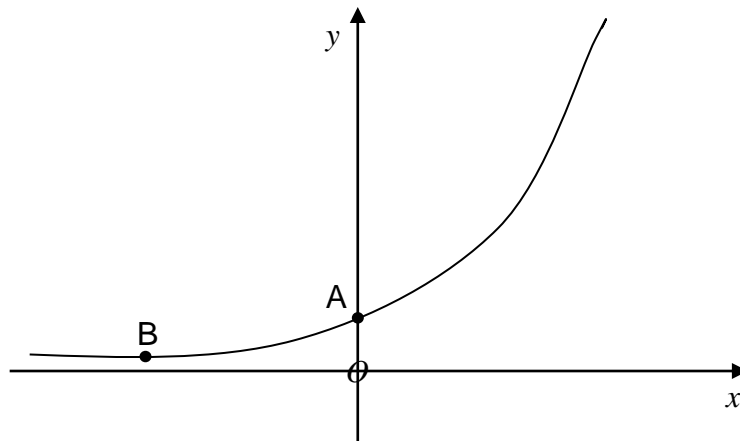
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M Miscellaneous

Question 1 (Spec ref 2.13)

A (0, 8) and B (−3, 1) are points on $y = ab^x$ as shown.

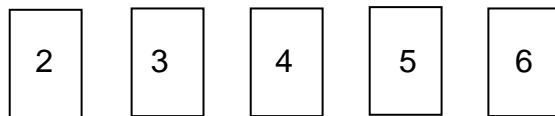


By working out the values of a and b , show that the equation of the curve can be written in the form $y = 2^{x+3}$

(4 marks)

Question 2 (Spec ref 1.2)

Here are five cards.



Using four or five of the cards, how many numbers greater than 4000 can be made?

(4 marks)

Question 3 (Spec ref 2.9/2.20)

Two sequences S and T have n th terms

$$S_n = \frac{2n+3}{n} \quad \text{and} \quad T_n = \frac{30}{3n+4}$$

Use an algebraic method to work out the value of n when $S_n + T_n = 3$

(5 marks)

Question 4 (Spec Ref 2.18)

By expanding and simplifying, solve

$$\left(2x^{\frac{5}{2}} - x^{\frac{1}{2}}\right)^2 = x(1 + 4x^4) + 108$$

(5 marks)

Question 5 (Spec ref 2.7)

In the expansion of $(a + 5x)^4$ where $a > 0$

The coefficient of x is three times the coefficient of x^2 .

Work out the value of a .

(5 marks)