

C2 review 2

1. Find the first three terms, in ascending powers of x of $(2 + x)(2 - x)^6$

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2. Find the area between the curve $y = x^2 + 2$ and the line $y = 3x$

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3. The minor sector AOB, subtended by an angle of 0.64° , has an area of 18cm^2 . Calculate the radius of the circle.

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4. Find the sum to infinity of $\frac{7}{10} + \frac{7}{100} + \frac{7}{1000} + \dots$ giving your answer in the form $\frac{p}{q}$ where p and q are integers.

Hence or otherwise find the value of $\sum_{r=1}^{\infty} \frac{k}{10^r}$ in terms of k.

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5. Solve the following equation : $10^x = 5$

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6. Given that :

$$1 + \log_a (7x - 3a) = 2 \log_a x + \log_a 2$$

Find in terms of a , the possible values of x .

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Answers

1. $128 - 448x + 288x^2$

2. $\frac{1}{6}$

3. 7.5cm

4. $\frac{7}{9}$, $\frac{k}{9}$

5. $x = 0.699$ (3sf)

6. $x = \frac{a}{2}$ or $x = 3a$