

Formula test

1) $ax^2 + bx + c = 0$. What are the roots of this equation? $x = \dots\dots\dots$

2) $a^x a^y \equiv \dots\dots\dots$

3) $a^x \div a^y \equiv \dots\dots\dots$

4) $(a^x)^y \equiv \dots\dots\dots$

5) $x = a^n \Leftrightarrow n = \dots\dots\dots$

6) $\log_a x + \log_a y \equiv \dots\dots\dots$

7) $\log_a x - \log_a y \equiv \dots\dots\dots$

8) $k \log_a x \equiv \dots\dots\dots$

9) A straight line graph, gradient m passing through (x_1, y_1) has equation $\dots\dots\dots$

10) Straight lines with gradients m_1 and m_2 are perpendicular when $\dots\dots\dots$

11) General term of an arithmetic progression, $u_n = \dots\dots\dots$

12) General term of a geometric progression: $u_n = \dots\dots\dots$

13) The sine rule is $\dots\dots\dots$

14) The cosine rule is $\dots\dots\dots$

15) The area of a triangle is $\dots\dots\dots$

16) $\cos^2 A + \sin^2 A = \dots\dots\dots$

17) $\sec^2 A = \dots\dots\dots$

18) $\operatorname{cosec}^2 A = \dots\dots\dots$

19) $\cos 2A = \dots\dots\dots$

20) $\cos 2A = \dots\dots\dots$

21) $\cos 2A = \dots\dots\dots$

22) $\sin 2A = \dots\dots\dots$

23) $\tan 2A = \dots\dots\dots$

24) The circumference of a circle = $\dots\dots\dots$ 25) The area of a circle = $\dots\dots\dots$

26) Pythagoras' theorem is $\dots\dots\dots$ 27) The area of a trapezium = $\dots\dots\dots$

28) Volume of a prism = $\dots\dots\dots$

29) For a circle of radius r , where an angle at the centre of θ radians subtends an arc of length s and encloses an associated sector of area A

i) $s = \dots\dots\dots$ ii) $A = \dots\dots\dots$

Differentiate the following

30) $x^n \dots\dots\dots$ 31) $\sin kx \dots\dots\dots$ 32) $\cos kx \dots\dots\dots$

33) $e^{kx} \dots\dots\dots$ 34) $\ln x \dots\dots\dots$

35) $f(x) + g(x) \dots\dots\dots$ 36) $f(x)g(x) \dots\dots\dots$ 37) $f(g(x)) \dots\dots\dots$

Integrate the following

38) $x^n \dots\dots\dots$ 39) $\cos kx \dots\dots\dots$ 40) $\sin kx \dots\dots\dots$

41) $e^{kx} \dots\dots\dots$ 42) $\frac{1}{x} \dots\dots\dots$

43) $f'(x) + g'(x) \dots\dots\dots$ 44) $f(g(x))g'(x) \dots\dots\dots$

45) The area under a curve = $\dots\dots\dots$

46) $|x\mathbf{i} + y\mathbf{j} + z\mathbf{k}| = \dots\dots\dots$

47) The mean of a set of data = $\dots\dots\dots$

48) The standard Normal variable $Z = \dots\dots\dots$

49) Weight = $\dots\dots\dots$ 50) Friction $F \dots\dots\dots$ 51) Newton's Second Law $\dots\dots\dots$

52) For motion in a straight line with variable acceleration:

i) $v = \dots\dots\dots$ ii) $a = \dots\dots\dots$

iii) $r = \dots\dots\dots$ iv) $v = \dots\dots\dots$