Integrales trigonometricas formulas pdf

SENIOR TECHNICAL FACULTY OF MARINE AND MARINE MACHINERY / NAUTIKAKO ETA ITSASONTZI MAKINETAKO GOI ESKOLA TEKNIKOA PRELIMINARY CONCEPTS OF MATHEMATICS 6. FUNCTION INTEGRALS - Trigonometry integrals These are integrals in which trigonometry functions appear: sen x, cos x, tan x. These functions can be displayed in rational P/q expression, in which case there are always real changes, this is the so-called general change that turns them into rational integrals. GENERAL CHANGE: In line with this, to express sinus and cosine as functions t, we can consider: expressions that are derived from: Sep 2A x 2 sen cos A; cos 2A s cos2A - sen2A, which makes 2A x. So we can put: Example 28: Let's find integral, Solution: Creating a general change, so that x/2 s t, we only have to replace it directly to turn it into a rational: Finally, we must replace the value of t: The student can practice with this common method by doing the following exercises: Let's now look, let's see that certain integrals form: in which sen x or cos x appears multiplication on dx, although they can be made using a common method, it is usually easier to perform its simple replacement: sen x with t or cos x t. As in the following example: Example 29: Let's find integral, Solution: We make these changes, with what we left: rational integral, the result of which : A student can practice (by a general change or this one seen here) integrals: in these cases we have to make changes that we will call alternative trigonometry: Based on the trigonometry circumference, the radius of which is 1, we make changes: According to the schedule, we observe the right triangle, whose cathests measure 1 and t (red segment tangent x), the hypousen root of these values in the square. Then we can say: with this change trigonometry integrals become rational, but it is necessary that in them the sinus and cosin were raised to even forces, so that, replacing the radicals of the denominator, disappeared. Example 30: Let's find integral, Solution: As soon as a tangent function appears we make this alternative change: tg x s t finally in t replace tg x. Example 31: Let's find an integral, solution: In this integral there is a tg x and a sen x function raised to uniform power, so it may be suitable change, tg x x t, x s arc tg t: replacing it with rational: finally we replace t t t t x. Other integrals for the student in practice: We can always develop it in the amounts of integral forms: in which depending on what m and there are two possibilities: i) m or n odd or both odd. Be, for example, m strange, i.e. m x 2p-1, the integral remains: it can be expressed in form: and now will be done by replacement: sen x with t, - cos x dx s dt, and integral becomes immediate. Example 32: Let's find integral, Solution: the function of cosine rises to odd power, so we can express integral in form: and now with the replacement of sen x't, we have: ii) m and n are both pairs. In this case, the integral will have a form: then we can express, for example: , and so when it is developed in addition, we appear several forms integrals: . In short, it all comes down to performing integral forms: a) When a whistleblower can even be done piecemeal, as we've seen in the case of sen2x, and cos2x. Example 32: Let's find integral, Solution: This integral can be expressed: what we do piece by piece: then we have, therefore, an integral part of the square sine we already know this (remember): And so we can conclude: --Return to the integral page - As logarite and exponential functions, trigonometry functions can also be integrated. A separate set of formulas is available for all trigonometry functions, as well as for reverse trigonometry functions. These formulas can be used directly instead of integrating this integration. In addition, trigonometry identities are also important for problem solving, especially when using methods such as substitution. Trigonometry features are listed below. With the exception of the last four formulas, the rest are obtained directly using the results of their respective derivatives. The last four formulas are derived from trigonometry identification and replacement integration. When calculating this trigonometry integration it is important to follow the strategy as described below.1 If the synusone function is raised to a strange exhibitor, then hold the sinus function separately and use the identification sin2 (x) s2 (x) x 1 to achieve cosine function and therefore use the method of integration through replacement when comparing cosine to new variable.2 If the cosine function is raised to a strange exhibitor, then hold the cosine function separately and use the identification sin2 (x) s2 (x) s1 to get the sinus function and therefore use the method of integration through replacement by matching the sinus to the new variable.3 In case both the function of the blues and cosine are raised to the exhibitor, so that the middle-angle identity can be raised to the exhibitor. so that the identity of the middle corner can be raised to the exhibitor, So that the identity of the middle angle can be raised to the exhibitor, so that the identity of the middle angle can be raised to the exhibitor to achieve full integration within the oblique function.4 Other identities such as: can also be used in the necessary places.5 If the drying function is raised to a uniform exhibitor, then hold the secant function separately and use the identification sec2 (x) 1 tan x2 (x) to get a tangent function and therefore keep the secant function separate and use the identification sec2 (x) No. 1 x tan2 (x) to get the tangent function and therefore keep the secant function separately and use the identification sec2 (x) 1 x tan2 (x) to get the tangent function and therefore keep the secant function separates and uses sec2 (x) function secant separates and uses sec2 (x) to get the tangent function and therefore keep the secant function separate and use the identification sec2 (x) 1 x tan2 (x) to get the tangent function and, therefore, keep the secant function separate and use the identification function sec2 (x) 1 x tan2(x) to get the tangent function and therefore keep the secant function separately and use the identification function, use the method of integration through replacement by comparing tangent with the new variable.6 If the tangent function is raised to an evenly exhibitor then hold the sec (x) function so (x) separately and use the id id sec2 (x) 1 x tan2 (x) to get the secant function, and therefore use the method of integration through replacement by mapping secant to the new variable. Exercise 2 Comments 0 Loves Statistical Notes Be First as It's 1. Trigonometry integrals 71 VII TRIGONOMETRIC INTEGRALS Ten more formulas will be added to the current student integral form. There are six relevant six trigonometry functions of sinus, cosin, tangent, cotangen-te, drying and cosecant, and four more corresponding to the reverse of those derived from six trigonometry functions. The latter refers to the fact that if the derivative tangent is a square sekant, then an integral part of the square sequestration is tangent. (17) sen y du cosu c' no ∫ (18) cosu du sen u c' no ∫ (19) tanu du l'n secu ln cosu c' ∫ (20) cotu du ln sen u c' no ∫ (21) (∫) Trigonometry integrals 72 (22) (scu du ln cscu cot u s s ∫ (23) 2 sec u du tanu c s s ∫ (24) 2 csc u du cotu c' No ∫ (25) tanu secu du secu c' No ∫ (26) cocu du cscu c' no ∫ As in all cases new formulas , use them properly variable changes should be made where u is the argument of trigonometry function. Illustration 1: Integration 9sen x dx∫ Solution: In this case, the argument is 9x, i.e. u x 9x , from where du s 9dx To have a du differential, you must multiply by 9; but in order not to change the original integral, it must also be divided into 9, so: No 1 9 9 sen x dx sen x dx ∫ ∫ sen u du 3. Trigonometry Integrals 73 - 1 1 9 Sep y du Cosau c' ∫ 1 9 Sep x dx x x x c' No ∫ Example 2: Integration ()) Solution: In this case the argument is 3x 2 - 4x y 11 , so that s 3x 2 - 4x No 11 , from du s (6x - 4) dx To have a differential du you have to multiply by 2; перо пара que no se altere la integral оригинальный тамбовский дебе dividirse entre 2, de modo que: ( ) ( ) ( ) ( ) ( )2 21 3 3 3 4 11 4 4 11 2 2 2 ⎡ ⎤⎣ ⎦∫ ∫x загар x x загар x x x x x x x x 3 4 11 6 4 2 загара x x x d ∫x x загар x ∫x dx ln сек x x c c Тригонометрические интегралы 74 CHECK A: For the purpose of character reduction, when it comes to a derivative of a whole result, do it. ( )21 3 4 11 2 I ln sec x x c ' + + + Then ( ) ( ) 2 2 3 4 11 1 0 2 3 4 11 d sec x x dI dx dx sec x x ⎡ ⎤ ? +⎢ ⎥ ? +⎢ ⎥ ? +⎢ ⎥ ⎢ ⎥ . ⎢ ⎥ ⎣ ⎦ 2 2 2 2 2 2 2 2 2 3 4 11 3 4 11 3 4 11 3 4 11 1 2 3 4 11 d tan x x sec x x x x dx sec x x ⎡ ⎤ + + - ⎢ ⎥ - ⎢ ⎥ - No ⎢ ⎥ ⎣ ⎦ ( ) ( ) ( ) (2 2 2 3 4 11 3 4 11 6 41 2 3 4 11 загар x x x x сек x x ⎡ ⎤⎣ ⎦⎥ ⎢x x x ⎡ ⎤⎢ ⎥⎡ ⎤⎢ ⎥⎣ ⎦ . . . . He said he was not He said he was not , he said. He said he was not the one who was . . . . ⎢ ⎥⎣ ⎦ () ()2 3 2 3 4 11 dI x so x x dx s and 5. Trigonometry integrals 75 EXERCISE 25 Follow the following integrals: 1) 2)13sen x dx∫ 4cos x dx∫ 3) 4) (x dx-∫ ()17 6cot x dx-∫ 5) 6)) (11 12sec x dx'∫ ()1 5csc x dx -∫ ∫ 7) 8) ( ) ()2 5 10 1x Sen x dx s (∫) ()2 3 3 5 10 10x cos x x x dx' - ∫ 9) 10) (No2 2 3 3 7 21 9x tan x s s ∫ () 2 3 6 9 15x x crib x x dx th .∫ 11) (No 2 3 2 2 6 6 3 8 12 12 13x x sec x x x x dx th ∫ 12) 13) 5 2 Sep x dx x ∫ 2 7 3 cos dx xx ⎛ ⎞⎜ ⎟⎝ ⎠∫ 14) 15)3 2 9 tan dx x ⎛ ⎞⎜ ⎟⎝ ⎠∫ 4 3 2 5 csc dx x x ⎛ ⎞⎜ ⎟⎝ ⎠∫ 6. Интегральная тригонометрическая 76 TECHNICALS AND INTEGRATION RESOURCES Для интеграции любой другой тригонометрической функции, которая не может быть решена с переменным изменением, например, изученным на предыдущих страницах этой главы, следует использовать различные алгебраические методы и ресурсы для уменьшения исходной функции до эквивалентной формы, уже неуступчимой. Независимо от используемого метода или ресурса, необходимо иметь под рукой следующие тригонометрические формулы или идентичности: (1) 2 2 1sen A cos A (2) 2 2 1tan A sec A (3) 2 2 2 2 21cot A csc A s (4) 1 сен A csc A s (5) 1 cos A sec A s (6) 1 загар A cot A s (7) 1 кроватка A tan A s (8) 1 сек A cos s 7. Тригонометрические интегралы 77 (9) 1 csc A sen A s (10) сен Загар A cos A s (11) cos A cot A sen A s (12) ( )2 1 1 2 сен A cos A (13) (2 1 1 2 2 cos A ' (14) 2 2sen A sen A cos A' (15) 2 2 2 2 1 2 2 2 1cos A cos A A Sen A cos's Equally, some general rules must be taken into account to avoid converting the original integral into another more complex function: a) If a function to be integrated consists of two or more trigonometric factors, they should have the same argument; otherwise, until the arguments are consolidated, they cannot be integrated. For example, an integral cannot be integrated until it is equal to 2 4sen x tan x dx∫ read the sinus arguments with tangents. b) It is necessary to avoid the transition from one integral part of the breast to another pigtail in the same way, because it is believed that one and the other are the same in terms of its integration of the technique. 8. Trigonometry integrals 78 For example, if you have an integral formula and you use a trigonometry formula (1) 2 sen x dx∫ to install, that as it is ()2 2 2 1sen x dx cos x dx cos x dx s.∫ ∫ ∫ ∫ have moved from integral to integral is considered not 2 sen x dx∫ 2 cos x dx∫ advanced absolutely nothing because they are the same. c) When the square technique should be used more than once, the same criterion should always be observed because otherwise it returns to the original integral. Using the same criterion always means always using the same three-gonmetric function in a square to replace it with the equivalent of two terms, rather than over and over again. Some later examples will come true of this. d) To integrate :m n n sen v cos v dv∫ i) If m s n, you should use a trigonometry formula (14), in which, after, we find that 1 2 sep a cos A sen A s, so 2 2 2 Sen Sen A sen A ⎛ ⎞ s ⎜ ⎟⎝ ⎠ etc. 3 3 3 1 2 Sep A cos A cos A sen A ⎛ ⎞ s ⎜ ⎟⎝ ⎠ s ⎜ ⎟⎝ ⎠ ii) If m s 1 or n s 1 , with a change of variable u, equal trigonometric function with an exhibitor, except 1, solved. In any other case, use the square technique to divide the integral into two parts. 9. Trigonometry integrals 79 Basic methods: (a) square technique. b) The technique of transfer to the chest and/or cosenos. c) Techniques of conjuged binomial. (a) Square technique: it consists of factoring trigonometry force into a square factor multiplied by what is left; this square factor is replaced by its two-term equivalent to split the original integral into two parts. Since almost all the integrals of the different forces of the six trigo-nometric functions use the technique of squares, the next block of examples will show the technique of integrating sinuses in a square, sinus to cube, sinus to the fourth force, etc.; same with tangent and secant. Ejemplo 3: Integrar 2 sen x dx∫ Solusion: Si se emplea la t'cnica de los cuadrados se tienen dos opciones: (des-2 2 1sen x cos x formula (1), p. 76) or do, according to forr-()2 1 1 2 sep x cos x mule (12). But as seen in the example (b) on page 78, the first ray-tion should not be used because it is transferred from one form to another equal. Next ()2 1 1 2 sep x dx cos x dx s ∫ ∫ 1 1 2 dx cos x dx s ∫ ∫ 1 1 2 2 dx cos x dx s ∫ ∫ 10. Trigonometry integrals 80 The first integral is already a formula. For the second integral, or x 2x, from where . So multiplying and dividing by 2 at the same time, so that the original integral does not change2du dx: ( ) 1 1 2 2 2 2 2 dx cos x dx ⎡ ⎤ ? ⎢ ⎥⎣ ⎦∫ ∫ 1 . 1 2 4 dx cos u du'∫ ∫ 1 1 2 x sen y c' 2 2 x sen x dx sen x c' ∫ Example 4 : Integration 3 sen x dx∫ solution: Using the technique of squares, the cubic sinus is counted in the square of the sinus se-no. Square blue is replaced by the equivalent of two terms (1 - cos 2 x), subject to the subparagraph rule (a), p. 77, multiplied, and then is part of two integrals: 3 2 sen x dx sen x sen x dx-∫ ∫ ()2 1 cos x sen x dx - ∫ 2 sen x dx cos x x sen x dx - ∫ ∫ u - cos x du - sen x dx 11. Trigonometry integrals 81 First integral is already a formula. The second integral is in the form specified in inci- so (d) page 78 and meets the requirements of subincizo (ii). So you make a variable change specified to get 2 sen x d∫ ∫x u s no ∫ ∫ 3 or cos x s I mean. It should be taken care that this method indicates4 2 2 sen x sen x sen x c that the factor in the square (and only one) is the one that should be replaced by its two term equivalent, not the two square factors. So 4 2 2 sep x dx sen x sen x dx-∫ ∫ ()2 2 cos x sen x dx s ∫ 2 2 sep x dx sen x cos x x x dx s ∫ ∫ The Second Integral is marked on subsection (d) on page 78 and meets the requirements of sub-sub-inciso (i) so that the formula (14) on page 77:12 must be used. Trigonometry integrals 82 2 2 1 2 2 sen x dx x dx ⎛ ⎞ x ⎜ ⎟⎝ ⎠∫ ∫ 2 2 2 4 Sen x dx x dx s ∫ ∫ Both integrals have a sinus in a square, only with different arguments. It's very good, As shown in the example of page 3, 79: (( ) () 1 1 1 1 1 4 2 cos x dx x dx s ∫ ∫ . . . . 4 2 2 8 8 dx cos x dx x dx ∫ ∫ ∫ ∫ s 4 8 4 32 x сен x dx sen x sen x c s s No ∫ Пример 6: Интеграция 5 сен x dx∫ Решение: Использование техники квадратов учитывается пятый синус синус квадратный синус на кубический синус, т.е. Так 5 2 3 сен x сен x сен x c 5 2 3 сен x dx сен x сен x dx-∫ ∫ ( )2 3 1 cos x sen x dx s ∫ 13. Trigonometry integrals 83 3 3 3 Sep x dx cos x sen x dx s ∫ ∫ The first integral was solved in the example of 4 pages 80, so that only its result will be copied. The second integral refers to the subparagraph (d), subinsiso (iii), p. 79/80, so the technique of squares with the same criteria must be reused, i.e. if it was previously taken into account to obtain a sinus square to replace it with the equivalent of two terms, now again the square sinus must be accounted for and replaced with the equivalent of two terms. This is achieved: 3 2 2 sep x dx cos x sen x sen x dx s ∫ ∫ ()3 2 2 1sen x dx cos x sen x cos x dx s ∫ ∫ 3 2 4 Sep x dx cos x sen xdx cos x x xdx s ∫ ∫ ∫ Second and third integrals correspond to subparagraph (d), subinsisso (ii), pages 78/79, so with variable change it can be integrated. Making up u ' cos x du' - sen x dx 3 2 4 sen x dx u du ' ∫ ∫ ∫ 3 3 3 3 3 3 u cos x cos x cos x c' Trigonometry integra 84 5 5 52 1 3 5 Sep x dx cos x cos x x x s - ∫ Example 7: Integration 2 tan x dx∫ Solution: on the technique of squares, knowing that's so 2 x sec 2 x - 1, ()2 2 1tan x dx sec x dx ' ∫ ∫ 2 sec x dx dx' ∫ ∫ These two integrals are already straight out of the formula, So 2 so x x tan x x s no ∫ By the rules of mathematical letters should not be written like this, but 2 so x x tan x with s no ∫ Example 8 : Integration 3 tan x dx∫ Solution: By the technique of squares, it must be accounted for by tang in a square tang otherwise, and replace the square tang with its two-term equivalent (sec 2 x -1): 2 tan x tan x dx-∫ ()2 1sec x tan x dx-∫ 15. Integral trigonometry 85 2 sec x tan x dx x ∫ ∫ The first integral is solved by changing the variable u's so x, as du's sec 2 x dx. The second integral is already a formula. Thus, u du tan x dx' ∫ ∫ 2 2 u ln sec x c' 3 21 2 tan x dx tan x ln secx c' No ∫ Example 9: Integration 4 tan x dx∫ Solution: According to the technique of squares, it must be considered in a square tang anyway, and replace the square touch (and only one, one, not both of them) for their two-term equivalent: 4 2 tanning x dx tan x x dx-∫ ∫ ()2 2 1 sec x tan x dx-∫ 2 2 sec x tan x dx-dx-∫ ∫ For the first integral enough to make a variable change, as drifting so x x, and the second integral was solved in the example of 7:2 du sec x dx s 2 u du tan x dx' ∫ ∫ 16. тригонометрия 86 ( ) 3 3 u x tan x c ' - 31 3 загара x x загар x c .∫ ∫ . . . . it should be counted in a square tangent otherwise, and square tang should be replaced by its two-term equivalent (sec 2 x - 1): 5 2 3 tan x dx tan x dx-∫ ∫ ()2 3 1sec x tan x dx-∫ 2 3 3 sec tan x dx-∫ ∫ For the first integral enough to make a variable, from where the seu so 'gets. The second integral was decided in the example 8:2 du sec x dx s 3 u du tan x dx s ∫ ∫ 4 21 4 2 or tan x ln ln sec x c s . Trigonometry integrals 87 5 4 21 1 4 2 tan x dx tan x ln sec x s q ∫ CHECK: For the purpose of reducing symbols when referring to a derivative of an integral result, do so. 4 21 1 4 2 I tan x x ln x x ln x ln x cm . . . . ⎢ ⎥⎢ ⎥ ⎢ ⎥⎣ ⎦⎣ ⎦⎡ ⎤⎡ ⎤ . . . . ⎢ ⎥⎢ ⎥ ⎢ ⎥⎣ ⎦⎣ ⎦ . . . . сек x x так x сек x x загар x dx dx ⎡ ⎤⎡ ⎤ x ⎢ ⎥⎢ ⎥ ⎢ ⎥⎣ ⎦⎣ ⎦ No 3 2 2 загара x сек загар x сек загар x x x 3 2 2 ⎣ ⎦⎣ ⎦⎡ ⎤⎡ ⎤1 тан x загар x загар x загар x загар x загар x : Integration 2 sec x dx∫ solution: This integral is a direct formula. Just apply

the formula (23) on page 72. 18. Trigonometry integrals 88 2 sec x dx tan x s ∫ no zlt;3'gt; example 12: Integration 3 sec x dx∫ Solution: All nones of the powers of the secant and the coscella can only be integrated by a method called partial integration, which will be considered in the next chapter (example 4, p. 107). It therefore has yet to be integrated until the issue of partial integration in the next chapter is considered. Illustration 13: Integration 4 sec x dx∫ Solution: By square technique, it is counted into a square secant by square secant. Just as it took the sinus to the fourth and tangent to the fourth, only the first square factor had to be replaced by its equivalent of two terms: 4 2 2 sec x dx sec x sec x dx-∫ ∫ ()2 2 1tan x sec x dx -∫ 2 2 tanning x x dx x dx s no ∫ ∫ For the first integral enough to make a variable change u s so x, from where du s sec2 x; The second integral is already a direct formula: 2 2 u du sec x dx s ∫ ∫ 3 3 x c and 19. Integral trigonometry 89 4 31 sec x dx tan x tan x x q q ∫ b) The technique of transferring everything to the breast and/or cosseses: It consists of passing or writing all trigonometric functions in terms of breasts and/or cossen, from what all functions они имеют эквивалент в груди и / или cosses, так как они x так x x x s кроватка x сен x сек x x x 1 csc x сен x . . After writing everything in terms of sinus and/or cosine, the technique of squares is simplified and re-applied if as a result the integrals are not yet ready for integration. Illustration 14: 2 sen x crib x dx sec x∫ Solution: Transfer all breasts and/or cosine: 2 2 1 cos x sen x cot x senx sec x cos x cos x ∫ ∫ 20. Trigonometry integrals 90 2 sen x cos x x dx sen x s ∫ 2 sen x dx s ∫ This integral is in the form specified in subparagraph (d), sub-synchronization (ii), pages 78/79, so with variable change it can be integrated. Действительно, делая u s cos x , откуда du ' - sen x dx ( ) ( ) (2 cos x sen x dx ' ∫ 3 2 3 u u du c ' s - ∫ 2 31 3 sen x cot x dx x c sec x x s ∫ s 15: Integrate dx 2 2 2 2 так x cos x кроватка x сен x сек x csc x∫ Решение: Передача все груди и / или cosine: 2 2 2 2 1 1 сен x x cos x x sen x cos x sen x x sen x cos x cos x cot x sen x dx dx sec x sen x sen x ⎛ ⎞⎛ ⎞ ⎜ ⎟⎜ ⎟ ⎝ ⎠⎝ ⎠ x ⎛ ⎞⎛ ⎞ ⎜ ⎟⎜ ⎟ ⎝ ⎠⎝ ⎠ ∫ ∫ 21. Тригонометрические интегралы 91 2 2 сен x cos x cos x sen x sen x dx x sen x x s ∫ 3 3 sen x cos x dx s ∫ Этот интеграл соответствует тому, что указано в подпункте (d), субинсисо (i), стр. 78, тригонометрическая формула (14) должна быть использована в которой, путем очистки, вы получите, что , 1 2 2 сен x x x сен x так 3 3 3 1 2 2 сен x x сен x сен x ⎛ ⎞ x ⎜ ⎟ ⎝ ⎠ поэтому, 3 3 3 1 2 2 сен x x dx сен x dx ⎛ ⎞ x ⎜ ⎟ ⎝ ⎠ ∫ ∫ 31 2 8 сен x DX S ∫ Чтобы увидеть детали того, как этот интегральный является решена , см. пример 4 на странице 80: 21 2 2 8 сен x сен x dx s ∫ ( ) 21 2 1 2 8 сен x cos x dx s ∫ 21 1 2 2 2 8 сен x dx sen x cos x x ∫ ∫ dx. Trigonometry integrals 92 For the first integral must make a change to the variable u x 2x, from where du x x 2 dx. Па-ра-ла-сегунда интегральный hacer V и cos 2x, де Донде дв - 2 сен 2x dx : ( ) ( )21 1 1 1 2 2 2 2 2 2 8 8 2 сен x dx cos x sen xdx ⎡ ⎤⎡ ⎤ <8> 16 сен-дв⎢ ⎥⎢ ⎥ ⎣ ⎦⎣ ⎦ ∫ ∫ сен-у-дю-ду-2 dv 21 1 16 16 senu du v dv' ∫ ∫ 3 1 1 2 16 16 3 v cos x c ⎛ ⎞ й й ⎜ ⎟ ⎝ ⎠ й й й й 2 2 3 2 1 2 2 16 48 загар x Кокс кроватка x сен x dx x кос x сек x сек x x x ∫ c) Такника-де-лос-биномиос конъюгадос: Куандо ан-эль-деноминадор апарес uno de los binomios конъюгадос que se mencionan en la siguiente tabla , the numerator and denominator are multiplied by its conjugation to get in the denominator its equivalent of the term squared. This method is based on the fact that of three trigonometry formulas called pyphagothria or squares (see formula (1), (2) and (3) on page 76), by cleaning either which appear on the left side of the equal sign, you get the difference of squares that can be accounted for in two conjuged binomials. 23 years old. Trigonometry Integral 93 The following table shows what is stated in the previous paragraph: Pythagone Formula: 2 possible clearings: (square difference) Binomios conjugated sen2 A and cos 2 A x 1 sen2 A s 1 - cos 2 A S (1 - cos A) (1 - co A) (b1) cos 2 a s 1 - sen 2 A s (1 - sen A) (1 Sep A) (b2) tan2 A - 1 sec 2 A tan2 A s sec 2 A - 1 (sec A - 1)) (sec A - 1) (b3) 1 sec 2 A - tan2 A' (sec A - tan A) (sec A and tan A) (b4) cot 2 A and 1 s csc 2 A cot 2 A s csc 2 A - 1' (csc A - 1) (csc A - 1) (b5) 1 ' csc 2 A - cot 2 A' (csc A - cot A) (csc A and cot A) (b6) The idea behind this method is that that the numerator can be divided in each of their terms between the whole denominator; however, denominators cannot be par-dashers. Thus, it is a question of having one term appear in the denominator and in number two or more, in order to divide the faction by the corresponding amount. Once the numerator and denominator have been multiplied by the conjugation of the denominator of the binomial, the product of the denominator will give the difference of the squares corresponding to the table above, read from right to left, equivalent to the trigonometry function of the curd. The technique (1) squares or technique (2) converts everything into se- nos and/or sess reused. Illustration 16: Integration 2 1 2 tan x dx cos x ∫ 24. Trigonometry Integral 94 Solution: The denominator has two terms, but thus cannot be divided into two factions. However, this denominator is one of the conjugated binomials (b1) of the front table. This suggests that the numerator and denominator should multiply on its con-gado binomial, i.e. on (1st cos 2x). Создание его похожим: ( ) ( )) 2 1 22 1 2 1 2 2 загара x x dxtan x dx cos x cos x cos x x cos x s s s ∫ ∫ ( ) 2 2 2 2 2 тан x cos x dx cos x x s ∫ ( ) 2 2 2 2 2 2 загара x загар x cos x dx sen x s ∫ В это время числитель уже имеет два термина, так что вы уже можете начать в су-ма из двух фракций: 2 2 2 2 2 загара x dx tan x x dx sen x sen x s ∫ ∫ Как только интеграл делится в сумме двух, применяет критерий передачи всего к груди и/или сшитым ва-иным, замеченным на странице 89 : 2 2 2 2 2 2 sen x dx x cos x dx x dx x sen x x sen x x sen x ∫ ∫ 2 dx sen x cos x cos x sen x s s s ∫ ∫ For the first integral, sub-inc (i), on page 78. 25. Trigonometry integrals 95 The Second Integral is equal to the ssecant, because, so 1 csc A sen A s 2 1 2 dx csc x dx sen x s ∫ ∫ 2 4 2csc x dx csc x dx s s s ∫ ∫ () 1 1 2 2 2 csc x dsc x dsc x dx ⎡ ⎤ x no ⎢ ⎥ ⎣ ⎦ ∫ ∫ 1 2 2 2 2 22 cscu du csc v dv' no ∫ ∫ ( ) ( ) 1 1 2 2 ln cscu cot u ln cscv cot v c ' q ( ) ( )) 2 1 1 4 4 2 2 2 2 ∫ тан x dx ln csc x cot x csc x cot x csc x c. Интегралы тригонометрикас 96 EJERCICIO 26 Realizar las siguientes интегралы: 1) 2)( )4 7 2sen x dx-∫ 3 9cos x d x∫ 3) 4)(5 9 11cos x dx-∫ ( )3 7 8tan x dx-∫ 5) 6)5 12 x dx∫ 4 13sec x dx∫ 7) 8)( )2 6 17sec x dx-∫ 4 9csc x dx∫ 9) 10)3 5 5sen x кроватка x dx∫ 3 2 9 9tan x csc x dx∫ 11) 12)8 8 8tan x sen x детская кроватка x dx∫ 3 3 3tan x cot x sec x csc x dx∫ 13) 14) 1 5 dx sen x'∫ 9 9 cos x dx sec x tan x'∫ 15) 16) 4 4 4 загара x dx csc x cot x'∫ 10 10 cos x dx sec x tan x'∫ 17) 18) 8 1 8 cos x dx cos x'∫ 2 6 6 dx csc x'∫ x'∫ integrales trigonometricas formulas pdf. formulas de integrales de funciones trigonometricas. formulas basicas de integrales trigonometricas. integrales trigonometricas inversas formulas. formulas para integrales funciones trigonometricas. formulas de reduccion integrales trigonometricas. formulas de las integrales trigonometricas. formulas de integrales trigonometricas directas