苦手な人も多い単元なので、そこで出てくる公式を一気にまとめてみます! 作りあさえつかんでしまえは、か法定理以外全て事出了能です!

光 cost, sindp"で対け"tand: sind でtanはでるので格略は引

- 加法定理 -

9 sin (d18) = sin dos B + 65 d sin B 11 D sin (x-B) = sind w B - ord sin B & to T. 3 cos (x18/ = cos dos B - sin dsin B 13ti (Das la-Bl=cosocosβ 1 sindsinβ 最悪のド!

○ 2倍角— 0 3 7"B= + 2732. | sin 20 = 2 sin 0 60 0 616 sind + cold=1 6 2 x = cos2x - sin2x ) 77.  $= 2\omega^{2} d - | = |-2 \sin^{2} d$ 

半角 全部输 cos 20 = 260 x - 1 51  $as^2d = \frac{1+as^2d}{2}$ 6320 = (-2 sih2 d11/ Si42d = 1-6520 このひをなにすればした.

り3倍角 cos 3从= cos(2×+×) ——— = cos 2d cos x - sin2d sin x

= (260°×-1) 60× - 260×(1-60°×)

= 4 as x - 3 cos x.

211-0. to sin 30 = -4 sin 30 + 3 sin 6

6℃ どちらかり片を覧えて、BOかが逆になる、でもいいです。

尚. (a) 0+isin 0 )3 ~ (2+7)3の居開

=  $\cos^2\theta + 3i\cos^2\theta \sin\theta - 3\cos\theta \sin^2\theta - i\sin^3\theta$ 

= (0,30 - 30,0 sin20) + i(30,20 sin0 - sin 0)

= (46530 - 3600) + 2 (95in 0 - 45in 30)

という出したもあります。 「何でできるかは理系の

(友達or 宮崎まで)

積和 これは想像以上に簡単です!

たとえる". sin Olas βを和こしたいなら、るみか"登場するとを書いて.

sin (d+13) = sin clos 13 + cs clsin 13 to 15. (一部) を消します。

L sin (a-B) = sind w B - 0.00 sin B 500. IR toil 2 sin d cos \ = sin (x + \beta) + sin (d-\beta)

: sind 60 B = 1 { sin (01-1) + sin (04-13) }

杨精 少双子

上とほぼりでですが、たとえば、siu + sinを積にしたいなら、

f sin (dn B) = sin O us B + us O sin B — O sin + sin (二注目L7. | sin (d-B) = sindw B - osd sin B IR RLF.

すると、 sin (a+B) + sin (x-B) = 2 sin das B pm 得られます

7" = + 1 = P | A = x = P + 2 = 1 | A = x = P + 2 = 1 | A = x = P + 2 = 1 | A = x = P + 2 = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x = 1 | A = x =

· sin A + sin B = 2 sin A+B cou A-B p+得5本3月

上の和預は、sintsin, as tas にしか使えません。

7"10 asint + b as 1 0 2"77381.

 $\sqrt{a^2+b^2}$   $\left(\sin\theta \frac{\alpha}{\sqrt{a^2+b^2}} + \cos\theta \frac{b}{\sqrt{a^2+b^2}}\right)$   $2 \cdot \left(\sharp \mp i \Re n + \cos h\right) \sharp \Re \varepsilon \iota J J$ 

132. ~ \$1317. ( at) - ( b) = 1 & 7 = 3 a 7". 16 227" 60 江定理 (os, sinでもせるといえます. (詳レくは宮崎へ) 使います.

20 25. ~ 1 t" wx, ~2 pr sind for to 5.

Joit' (sin O ON X + ON O SIX) = Jatb sin(O+X) LOUTET.

in a sind + bas  $\theta = \sqrt{a^2 b^2} \sin(\theta + bx)$  (of and  $\alpha = \frac{a}{\sqrt{a^2 tb^2}}$ )