Приложение 1.

Вариант 1

* 1. 5 – 4sin2 x = 4cos x;
  2. sin 2x + 4cos 2x = 1;
  3. cos 2x – cos 6x = 0;

Решение

1. 5 – 4sin2 x = 4cos x;

5 – 4(1-cos2 x) - 4cos x = 0;

4 cos2 x – 4 cos x +1 = 0;

(2cos x + 1)2 = 0;

cos x=

**x = ;**

1. sin 2x + 4cos2 x=1;

4cos2 x + 2sin x cos x – sin2 x – cos2 x = 0;

sin2 x – 2sin x cos x – 3cos x = 0 |: cos2 x 0;

tg2 x – 2tg x – 3 = 0;

tg x = a;

a2 – 2a – 3 = 0;

a = 3; tg x = 3; **x = arctg 3 + ;**

a = -1; tg x = -1; **x = –**

1. cos 2x – cos 6x = 0;

2sin 4x sin 2x = 0;

sin 4x = 0; 4x =; x = ;

sin 2x = 0; 2x = x = ;

**x = ,** n∈Z**.**

Вариант 2

1. 2sin2 x + 5cos x = 4;
2. 4sin2 x + sin 2x = 3;
3. sin x – sin 3x = 0;

Решение

1. 2sin2 x + 5cos x = 4;

2 – 2 cos2 x + 5cos x – 4 = 0;

2 cos2 x – 5cos x +2 = 0;

cos x = a, |a| ≤ 1;

2a2 – 5a +2 = 0;

a = 2;

a =;

|a| ≤ 1;

а **= ;** сos x **=;**

x = .

1. 4sin2 x + sin 2x = 3;

4sin2 x – 2sin x cos x – 3sin2 x – 3cos2 x = 0;

sin2 x - 2sin x cos x – 3cos2 x = 0 |: cos2 x 0;

tg2 x – 2tg x – 3 = 0;

tg x = a;

a2 – 2a – 3 = 0;

a = 3; tg x = 3; **x = arctg 3 + ;**

a = -1; tg x = -1; **x = ,** n∈Z

1. sin x – sin 3x = 0;

2sin 2x cos x = 0;

cos x = 0; 2x = πn; n∈Z x = ; n∈Z

sin 2x = 0; x = + x = , n∈Z .

**x = ,** n∈Z .

x