

```
float b[bec][3][VEC_WIDTH];
```

```
<инициализация b>;
```

ПОСЛЕДОВАТЕЛЬНЫЙ КОД

```
for (w = 0; w < VEC_WIDTH; w++) r[w] = 1;
```

```
for (w = 0; w < VEC_WIDTH; w++)  
{
```

```
    lo = 0.0;  
    hi = 1.0;
```

```
    for (i = 0; i < bec; i++)  
    {
```

```
        upgrade(b[i][0][w] == 0.0,  
                b[i][1][w], b[i][2][w], &lo, &hi);  
        if (lo > hi) break;  
    }
```

```
    for (i = 0; i < bec; i++)  
    {
```

```
        bi0 = b[i][0][w];  
        abi0 = fabs(bi0);
```

```
        for (j = i + 1; j < bec; j++)  
        {
```

```
            bj0 = b[j][0][w];  
            abj0 = fabs(bj0);
```

```
            upgrade(bi0 * bj0 < 0.0,  
                    abi0 * b[j][1][w] + abj0 * b[i][1][w],  
                    abi0 * b[j][2][w] + abj0 * b[i][2][w],  
                    &lo, &hi);
```

```
            if (lo > hi) break;
```

```
        }
```

```
        if (lo > hi) break;
```

```
    }
```

```
    if (lo > hi) r[w] = 0;
```

```
}
```

```
__m512 b[bec][3];
```

```
<инициализация b>;
```

ВЕКТОРНЫЙ КОД

```
_mm512_store_epi32(r, _mm512_set1_epi32(1));
```

```
__m512 lo = z0;  
__m512 hi = z1;
```

```
for (i = 0; i < bec; i++)  
{
```

```
    upgrade(_mm512_cmpeq_ps_mask(b[i][0], z0),  
            b[i][1], b[i][2], &lo, &hi);  
    if (!_mm512_cmplt_ps_mask(lo, hi)) break;
```

```
}
```

```
for (i = 0; i < bec; i++)  
{
```

```
    bi0 = b[i][0];  
    abi0 = ABS(bi0);
```

```
    for (j = i + 1; j < bec; j++)  
    {
```

```
        bj0 = b[j][0];  
        abj0 = ABS(bj0);
```

```
        upgrade(_mm512_cmplt_ps_mask(MUL(bi0, bj0), z0),  
                FMADD(abi0, b[j][1], MUL(abj0, b[i][1])),  
                FMADD(abi0, b[j][2], MUL(abj0, b[i][2])),  
                &lo, &hi);
```

```
        if (!_mm512_cmplt_ps_mask(lo, hi)) break;
```

```
    }
```

```
    if (!_mm512_cmplt_ps_mask(lo, hi)) break;
```

```
}
```

```
_mm512_mask_store_epi32(r,  
                        _mm512_cmplt_ps_mask(hi, lo),  
                        _mm512_set1_epi32(0));
```