

Сворачивание кубов

$$1) 28x^3 + 3x^2 + 3x + 1 = 0$$

$$2) 126x^3 - 3x^2 + 3x - 1 = 0$$

$$28x^3 + 3x^2 + 3x + 1 = 0;$$

$$4x(8x^2+x)+3x+1=0;$$

$$27x^3+x^3+3x^2*1+3x*1^2+1^3=0;$$

$$27x^3+(x+1)^3=0;$$

$$(3x)^3+(x+1)^3=0;$$

$$(3x+(x+1))((3x)^2-(3x)(x+1)+(x+1)^2)=0;$$

$$3x+x+1=0;$$

$$4x=-1;$$

$$x_1=-\frac{1}{4};$$

$$(3x)^2-(3x)(x+1)+(x+1)^2=0;$$

$$9x^2-3x^2-3x+x^2+2x+1=0;$$

$$7x^2-x+1=0;$$

$$D=1-4*7*1=1-28=-27; D<0;$$

no solutions

Answer: $-\frac{1}{4}$

$$126x^3 - 3x^2 + 3x - 1 = 0;$$

$$125x^3-x^3-3x^2*1+3x*1^2-1^3=0;$$

$$125x^3-(x-1)^3=0;$$

$$(5x)^3-(x-1)^3=0;$$

$$(5x-(x-1))((5x)^2+(5x(x+1))+(x-1)^2)=0;$$

$$5x-x+1=0$$

$$4x+1=0;$$

$$x_1=-\frac{1}{4};$$

or

$$(5x)^2+(5x(x+1))+(x-1)^2=0;$$

$$(5x)^2+5x^2+5x+x^2-2x+1=0;$$

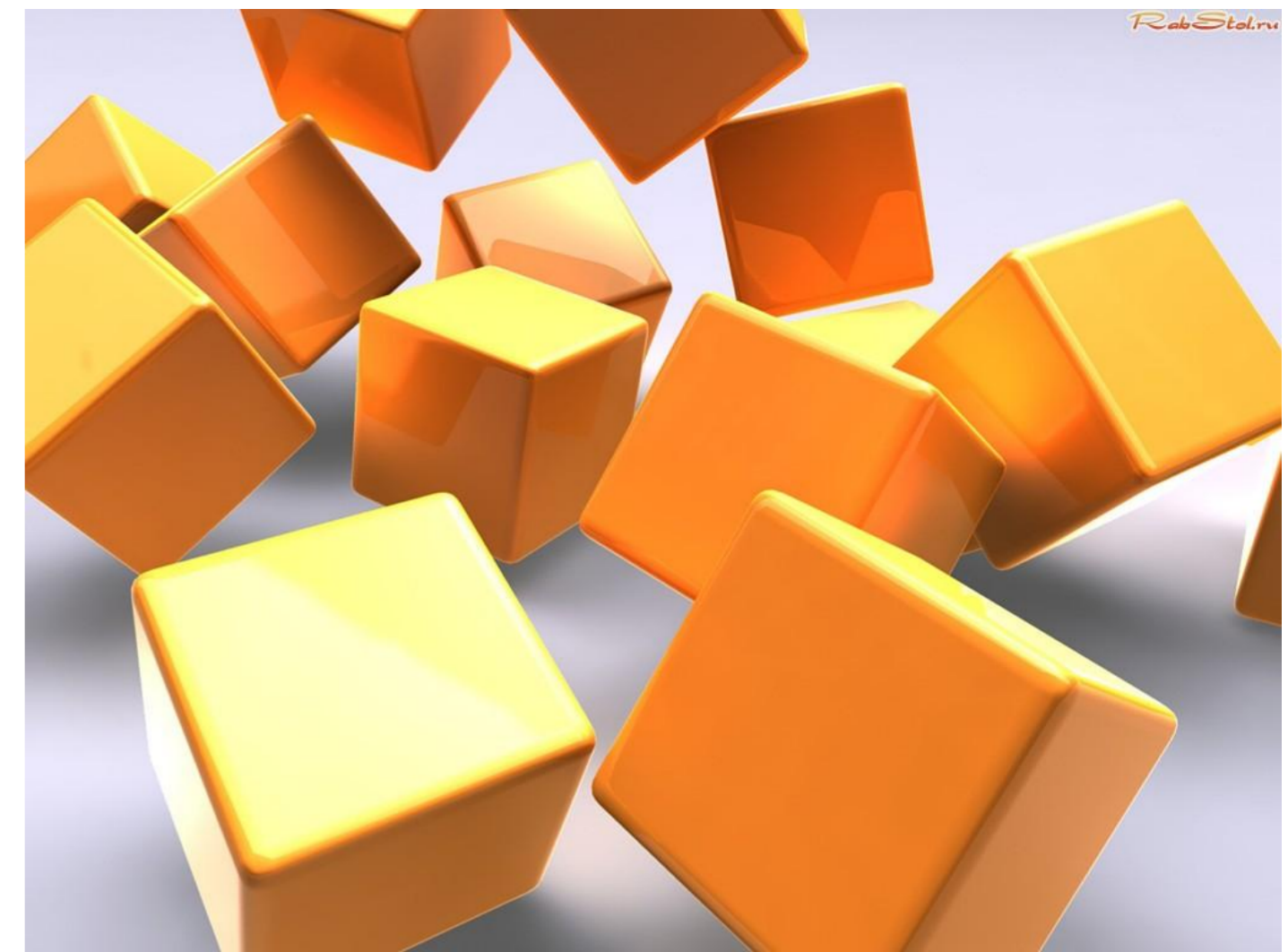
$$125x^2+6x^2+3x+1=0;$$

$$131x^2+3x+1=0;$$

$$D=9-4*131=9-524=-515; D<0;$$

no solutions

Answer: $-\frac{1}{4}$



$$(a+b)^3=a^3+3a^2b+3ab^2+b^3$$

$$(a-b)^3=(a-b)(a-b)^2=(a-b)(a^2-2ab+b^2)=$$

$$=a^3-2a^2b+ab^2-a^2b+2ab^2-b^3=$$

$$=a^3-3a^2b+3ab^2-b^3$$

$$126x^3 - 3x^2 + 3x - 1 = 0;$$

$$125x^3+x^3-3x^2*1+3x*1^2-1^3=0;$$

$$125x^3+(x-1)^3=0;$$

$$(5x)^3+(x-1)^3=0;$$

$$(5x+(x-1))((5x)^2-(5x(x+1))+(x-1)^2)=0;$$

$$5x+x-1=0$$

$$6x-1=0;$$

$$x_1=\frac{1}{6};$$

or

$$(5x)^2-(5x(x+1))+(x-1)^2=0;$$

$$(5x)^2-5x^2-5x+x^2-2x+1=0;$$

$$125x^2-4x^2-7x+1=0;$$

$$121x^2-7x+1=0;$$

$$D=49-4*121=49-484=-435; D<0;$$

no solutions

Answer: $\frac{1}{6}$