VI ТИП

1. Реши једначину: $-3 \cdot (4x+3)(4x-3) - (2x+1)^2 + (3x-4)^2 + 43x^2 = 70.$
2. Реши једначину: $(4x+3)^2 - 3 \cdot (2+3x)(2-3x) - (1-3x)^2 - 34x^2 = 56.$
3. Реши једначину: $-2 \cdot (3x+2)(3x-2) - (4-3x)^2 + (3x+1)^2 + 18x^2 = 23.$
4. Реши једначину: $(2-3x)^2 - 2 \cdot (4-5x)(4+5x) - (3x+2)^2 - 50x^2 = -8.$
5. Реши једначину: $(3-4x)^2 - (2x+1)^2 - 3 \cdot (2x-5)(2x+5) = 111.$
6. Реши једначину: $(3+4x)^2 - (2x-1)^2 - 3 \cdot (2x-3)(2x+3) = 63.$
7. Реши једначину: $(2x+3)^2 - (3x-7)^2 + 5 \cdot (x-3)(x+3) = -31.$

Решења задатака:

1. $-3 \cdot (4x+3)(4x-3) - (2x+1)^2 + (3x-4)^2 + 43x^2 = 70.$
$-3 \cdot (16x^2 - 9) - (4x^2 + 2 \cdot 2x \cdot 1 + 1) + (9x^2 - 2 \cdot 3x \cdot 4 + 16) + 43x^2 = 70$
$-3 \cdot (16x^2 - 9) - (4x^2 + 4x + 1) + (9x^2 - 24x + 16) + 43x^2 = 70$
$-48x^2 + 27 - 4x^2 - 4x - 1 + 9x^2 - 24x + 16 + 43x^2 = 70$
$-48x^2 - 4x^2 + 9x^2 + 43x^2 - 4x - 24x + 27 - 1 + 16 = 70$
$-52x^2 + 52x^2 - 28x + 26 + 16 = 70$
$-28x + 42 = 70$
$-28x = 70 - 42$
$-28x = 28$
$x = 28 : (-28)$
$x = -1$

2. $(4x+3)^2 - 3 \cdot (2+3x)(2-3x) - (1-3x)^2 - 34x^2 = 56.$
$16x^2 + 2 \cdot 4x \cdot 3 + 9 - 3 \cdot (4 - 9x^2) - (1 - 2 \cdot 1 \cdot 3x + 9x^2) - 34x^2 = 56$
$16x^2 + 24x + 9 - 12 + 27x^2 - (1 - 6x + 9x^2) - 34x^2 = 56$
$16x^2 + 24x + 9 - 12 + 27x^2 - 1 + 6x - 9x^2 - 34x^2 = 56$
$16x^2 + 27x^2 - 9x^2 - 34x^2 + 24x + 6x + 9 - 12 - 1 = 56$
$43x^2 - 43x^2 + 30x - 3 - 1 = 56$
$+30x - 4 = 56$
$+30x = 56 + 4$
$+30x = 60$
$x = 60 : 30$
$x = 2$

3. $-2 \cdot (3x+2)(3x-2) - (4-3x)^2 + (3x+1)^2 + 18x^2 = 23$
$-2 \cdot (9x^2 - 4) - (16 - 2 \cdot 4 \cdot 3x + 9x^2) + (9x^2 + 2 \cdot 3x \cdot 1 + 1) + 18x^2 = 23$
$-18x^2 + 8 - (16 - 24x + 9x^2) + (9x^2 + 6x + 1) + 18x^2 = 23$
$-18x^2 + 8 - 16 + 24x - 9x^2 + 9x^2 + 6x + 1 + 18x^2 = 23$
$-18x^2 - 9x^2 + 9x^2 + 18x^2 + 24x + 6x + 8 - 16 + 1 = 23$
$-27x^2 + 27x^2 + 30x - 8 + 1 = 23$
$+30x - 7 = 23$
$+30x = 23 + 7$
$+30x = 30$
$x = 30 : 30$
$x = 1$

4. $(2-3x)^2 - 2 \cdot (4-5x)(4+5x) - (3x+2)^2 - 50x^2 = -8$
$4 - 2 \cdot 2 \cdot 3x + 9x^2 - 2 \cdot (16 - 25x^2) - (9x^2 + 2 \cdot 3x \cdot 2 + 4) - 50x^2 = -8$

$4-12x+9x^2-32+50x^2-(9x^2+12x+4)-50x^2=-8$
$4-12x+9x^2-32+50x^2-9x^2-12x-4-50x^2=-8$
$+9x^2+50x^2-9x^2-50x^2-12x-12x+4-32-4=-8$
$+59x^2-59x^2-24x-28-4=-8$
$-24x-32=-8$
$-24x=-8+32$
$-24x=+24$
$x=+24:(-24)$
$x=-1$

5. $(3-4x)^2-(2x+1)^2-3\cdot(2x-5)(2x+5)=111.$
$9-2\cdot3\cdot4x+16x^2-(4x^2+2\cdot2x\cdot1+1)-3\cdot(4x^2-25)=111$
$9-24x+16x^2-(4x^2+4x+1)-3\cdot(4x^2-25)=111$
$9-24x+16x^2-4x^2-4x-1-12x^2+75=111$
$+16x^2-4x^2-12x^2-24x-4x+9-1+75=111$
$+12x^2-12x^2-28x+8+75=111$
$-28x+83=111$
$-28x=111-83$
$-28x=28$
$x=28:(-28)$
$x=-1$

6. $(3+4x)^2-(2x-1)^2-3\cdot(2x-3)(2x+3)=63.$
$9+2\cdot3\cdot4x+16x^2-(4x^2-2\cdot2x\cdot1+1)-3\cdot(4x^2-9)=63$
$9+24x+16x^2-(4x^2-4x+1)-3\cdot(4x^2-9)=63$
$9+24x+16x^2-4x^2+4x-1-12x^2+27=63$
$+16x^2-4x^2-12x^2+24x+4x+9-1+27=63$
$+12x^2-12x^2+28x+8+27=63$
$+28x+35=63$
$+28x=63-35$
$+28x=28$
$x=28:(+28)$
$x=+1$
$x=1$

7. $(2x+3)^2-(3x-7)^2+5\cdot(x-3)(x+3)=-31.$
$4x^2+2\cdot2x\cdot3+9-(9x^2-2\cdot3x\cdot7+49)+5\cdot(x^2-9)=-31$
$4x^2+12x+9-(9x^2-42x+49)+5\cdot(x^2-9)=-31$
$4x^2+12x+9-9x^2+42x-49+5x^2-45=-31$
$4x^2-9x^2+5x^2+12x+42x+9-49-45=-31$
$-5x^2+5x^2+54x-40-45=-31$
$+54x-85=-31$
$+54x=-31+85$
$+54x=54$
$x=54:54$
$x=1$