Тест 10

$3x^2 - 5x + q = 0$.

$x = 2 \Rightarrow 3 \cdot 2^2 - 5 \cdot 2 + q = 0 \Rightarrow 12 - 10 + q = 0 \Rightarrow q = -2$

$3x^2 - 5x - 2 = 0$. $\quad x_1 \cdot x_2 = -\frac{2}{3}$

$2x_2 = -\frac{2}{3} \quad x_2 = -\frac{1}{3}$.

Отв.: $-\frac{1}{3}$

Тест 11

$-2x^2 + 5x - 2 = 0$. $\quad a = -2, b = +5, c = -2$

$\Delta = 25 - 4 \cdot (-2) \cdot (-2) = 9 \quad x_{1,2} = \frac{-5 \pm 3}{-4} \quad \begin{cases} x_1 = 2 \\ x_2 = \frac{1}{2} \end{cases}$

$2 - \frac{1}{2} = 1\frac{1}{2}$ $\quad$ Отв: $1\frac{1}{2}$

Тест 12

$x^2 - 5x + 6 = 0 \quad \Delta = 25 - 24 = 1 \quad x_{1,2} = \frac{5 \pm 1}{2} \quad \begin{cases} x = 2 \\ x = 3. \end{cases}$

$E = x_1^{x_2} + x_2^{x_1} = 2^3 + 3^2 = 8 + 9 = 17$ $\quad$ Отв: 17

Тест 13

$6x^2 - x - 2 = 0. \quad \Delta = 1 - 4 \cdot 6 \cdot (-2) = 49 \quad x_{1,2} = \frac{1 \pm 7}{12} \quad \begin{cases} x_1 = -\frac{1}{2} \\ x_2 = \frac{2}{3} \end{cases}$

$E = 4x_1 + 6x_2 = 4 \cdot (-\frac{1}{2}) + 6 \cdot \frac{2}{3} = -2 + 4 = 2$ $\quad$ Отв: $E = 2$

Тест 14

$5x^2 + 14x + 9 = 0 \quad \Delta = 196 - 180 = 16 \quad x_{1,2} = \frac{-14 \pm 4}{10} \quad \begin{cases} x = -\frac{9}{5} \\ x = -1 \end{cases}$

$-\sqrt{3} \approx -1{,}7 \quad -1{,}5 < -\sqrt{3}$ $\quad$ Отв: $-\frac{9}{5}$

Тест 15

$4x^2 + 5x - 6 = 0 \quad \Delta = 25 + 96 = 121 \quad x_{1,2} = \frac{-5 \pm 11}{8} \quad \begin{cases} x = -2 \\ x = \frac{3}{4}. \end{cases}$

$A = \{-2; \frac{3}{4}\}$. $\quad A \cap Z = \{-2\}$ $\quad$ Отв: -2

Тест 16

$2x^2 - 5x + q = 0 \quad 2x - 6 = 0 \Rightarrow x = 3 \Rightarrow 2 \cdot 3^2 - 5 \cdot 3 + q = 0 \quad q = -3$

$18 - 15 + q = 0$

$2x^2 - 5x - 3 = 0 \quad x_1 \cdot x_2 = \frac{-3}{2} \quad 3 \cdot x_2 = -\frac{3}{2} \quad x_2 = -\frac{1}{2}$

Отв: $-\frac{1}{2}$

Тест 17

$15x^2 + 19x + 6 = 0 \quad \Delta = 361 - 360 = 1 \quad x_{1,2} = \frac{-19 \pm 1}{30} \quad \begin{cases} x_1 = -\frac{2}{3} \\ x_2 = -\frac{3}{5} \end{cases}$

Отв: наибольшее $x = -\frac{3}{5}$

Тест 18

$x^2+x-6=0 \quad \Delta=25 \quad x_{1,2}=\frac{-1\pm5}{2} \quad \left[\begin{array}{l} x=-3 \\ x=2 \end{array}\right.$

$x_1^2+x_2^2=(-3)^2+2^2=9+4=13$ Отв: 13.

Тест 19

$6x^2-x-1=0 \quad \Delta=1+24=25 \quad x_{1,2}=\frac{1\pm5}{12} \quad \left[\begin{array}{l} x_1=-\frac{1}{3} \\ x_2=\frac{1}{2} \end{array}\right.$

$A=\{-\frac{1}{3};\frac{1}{2}\} \quad A\cap\mathbb{Z}=\emptyset$ Отв: $card(A\cap\mathbb{Z})=0$.

Тест 20

$12x^2+x-6=0 \quad \Delta=1+288=289 \quad x_{1,2}=\frac{-1\pm17}{24} \quad \left[\begin{array}{l} x_1=-\frac{3}{4} \\ x_2=\frac{2}{3} \end{array}\right.$

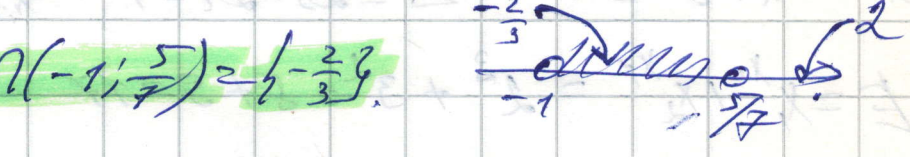
$2x_1+3x_2=2\cdot(-\frac{3}{4})+3\cdot\frac{2}{3}=-1{,}5+2=0{,}5$

Отв: 0,5 или $\frac{1}{2}$

Тест 21

$3x^2-4x-4=0 \quad \Delta=16+48=64 \quad x_{1,2}=\frac{4\pm8}{6} \quad \left[\begin{array}{l} x_1=-\frac{2}{3} \\ x_2=2 \end{array}\right.$

$A=\{-\frac{2}{3};2\} \quad A\cap(-1;\frac{5}{7})=\{-\frac{2}{3}\}$.



Тест 22

$2x^2+3x-2=0 \quad \Delta=9+16=25 \quad x_{1,2}=\frac{-3\pm5}{4} \quad \left[\begin{array}{l} x_1=-2 \\ x_2=\frac{1}{2} \end{array}\right.$

$A=\{-2;\frac{1}{2}\} \quad A\cap\mathbb{N}=\emptyset$ Отв: $\emptyset$

Тест 23

$5x^2-17x+14=0 \quad \Delta=289-280=9 \quad x_{1,2}=\frac{17\pm3}{10} \quad \left[\begin{array}{l} x_1=\frac{7}{5} \\ x_2=2 \end{array}\right.$

$\sqrt{2}\approx1{,}41 \quad \frac{7}{5}=1{,}4 \quad \frac{7}{5}<\sqrt{2}$ Отв: $\frac{7}{5}$

Тест 24

$2x^2+5x-3=0 \qquad 2x-1=0 \Rightarrow x=\frac{1}{2}$

$\Delta=25+24=49 \quad x=\frac{-5\pm7}{4} \quad \left[\begin{array}{l} x=-3 \\ x=\frac{1}{2} \end{array}\right.$ общее $x=\frac{1}{2}$

Тест 25

$18x^2-9x+1=0 \quad \Delta=81-72=9 \quad x_{1,2}=\frac{9\pm3}{36} \quad \left[\begin{array}{l} x_1=\frac{1}{6} \\ x_2=\frac{1}{3} \end{array}\right.$

$\left[\begin{array}{l} F=x_1^2-x_2^2=(\frac{1}{6})^2-(\frac{1}{3})^2=\frac{1}{36}-\frac{4}{9}=\frac{-3}{36}=-\frac{1}{12} \end{array}\right.$

Отв: $-\frac{1}{12}$

№ 6. (Полина)

$12x^2+7x+1=0 \quad D=49-48=1$

$x_1=\frac{-7-1}{2\cdot 12}=\frac{-8}{24}=\frac{-1}{3}$

$x_2=\frac{-7+1}{2\cdot 24}=\frac{-6}{24}=\frac{-1}{4}$

наименьшее $x=-\frac{1}{3}$

№ 9 (Амир)

$2x^2+5x-3=0.$

$D=25+24=49$

$x_1=\frac{-5-7}{2\cdot 2}=\frac{-12}{4}=-3$

$x_2=\frac{-5+7}{2\cdot 2}=\frac{2}{4}=\frac{1}{2}$

между -3 и $\frac{1}{2}$ целые числа:

$-2;-1;0$