1. (4   )

,

$$x^2 + (a - 34)x - 35a - 36 = 0.$$

: $\qquad x^2 + bx + c = 0 \; npu \; D = b^2 - 4c \geq 0$

$$x = x_1 = \frac{-b - \sqrt{b^2 - 4c}}{2}; \; x = x_2 = \frac{-b + \sqrt{b^2 - 4c}}{2} \Rightarrow p(x_1; x_2) = |x_2 - x_1| = \sqrt{b^2 - 4c}$$

,

.

$$D = b^2 - 4c = (a - 34)^2 + 4(35a + 36) = a^2 - 68a + 1156 + 140a + 144 =$$

$$a^2 + 72a + 1300 = a^2 + 72a + 1296 + 4 = (a + 36)^2 + 4 \Rightarrow min\sqrt{b^2 - 4c} =$$

$$min\sqrt{(a + 36)^2 + 4} = \sqrt{4} = 2$$

= - 36.

:   = - 36.

4   –   ,   .

3   –   ,   ,

,   .

1   -   .

0   –   .

2. (5   )

$^2 + 1 = 5$.

:

1. $= 5m$, $25m^2 + 1$ 5.

2. $= 5m + 1$, $(5m + 1)^2 + 1 = 25m^2 + 10 \, m + 2$ 5.

3. $= 5m + 2$, $(5m + 2)^2 + 1 = 25m^2 + 20 \, m + 5$ 5.

$$\begin{cases} x = 5m + 2, m - npouзвольное \; число, \\ \qquad y = 5m^2 + 4m + 1. \end{cases}$$

4. $= 5m + 3$, $(5m + 3)^2 + 1 = 25m^2 + 30 \, m + 10$ 5.

$$\begin{cases} x = 5m + 3, m - npouзвольное \; число, \\ \qquad y = 5m^2 + 6m + 2. \end{cases}$$

5. $= 5m + 4$, $(5m + 4)^2 + 1 = 25m^2 + 40 \, m + 17$ 5.

$$: \begin{cases} x = 5m + 2, \\ y = 5m^2 + 4m + 1. \end{cases} \quad \begin{cases} x = 5m + 3, \\ y = 5m^2 + 6m + 2. \end{cases} \quad m \in Z.$$
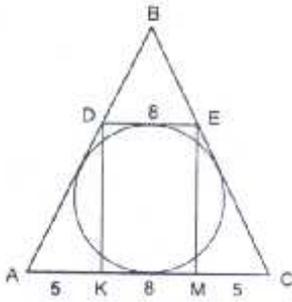
5   –   ,   ,   .

4   –   ,

,   .

3   –   ,

.

1   –   ,   ,

.

0   –   .

3. (6   )

.

, D E.

, $DE = 8$, $= 18$.

: D E –

$DEMK$, $KM = DE = 8$.

DK,

D.

ADK CEM. $(DK = EM)$

$(\angle A = \angle C,$ $\triangle ABC$ $)$.

$AK = MC = 5$.

,

$$AD + EC = DE + AC = 8 + 18 = 26 \Rightarrow AD = EC = \frac{26}{2} = 13.$$

$$DK = \sqrt{AD^2 - AK^2} = \sqrt{13^2 - 5^2} = 12. \qquad , \qquad \frac{12}{2} = 6.$$

: 6.

6   –   ,   ,   .

5   –   ,   .

2   -   ,   ,

.

1   -   .

0   –   .

4. (7   )

$$: x\sqrt{1 - y^2} + y\sqrt{2 - z^2} + z\sqrt{3 - x^2} = 3.$$

:

2 $1-$ ^{2}, $: |x|\sqrt{1 - y^2} \le \dfrac{x^2 + 1 - y^2}{2}.$

$$|y|\sqrt{2 - z^2} \le \frac{y^2 + 2 - z^2}{2} \quad |z|\sqrt{3 - x^2} \le \frac{z^2 + 3 - x^2}{2}.$$

, $a \le |a|$,

$$x\sqrt{1 - y^2} + y\sqrt{2 - z^2} + z\sqrt{3 - x^2} \le 3 \qquad\qquad (*)$$

,   .

$$x^2 = 1 - y^2, \quad y^2 = 2 - z^2, \quad z^2 = 3 - x^2. \qquad\qquad , \qquad :$$

$x = \pm 1, y = 0, z = \pm\sqrt{2}.$, x z (*) –

. , $: x = 1, y = 0, z = \sqrt{2}.$

$: x = 1, y = 0, z = \sqrt{2}$

7 – , , .

6 – , .

4 – , .

3 – , .

2 - , , .

.

1 - .

0 – .

5. (7)

28 , , ,

? (, –).

:

– | 1 | 1 |

| 2 | 2 | , , $\leq b.$,

, , . ,

.

– 28 ,

7 , | | |

21 – | | | , $a < b.$

6 , $7 \cdot 6 = 42.$

12 – 6

| | * | 6 , | * | |

$21 \cdot 12 = 252.$

, $42 + 252 = 294$

.

: 147 .

7 – .

5 – , ,

.

2 – (

).

1 – .

0 – .