



# PROBLEMS

Extracurricular study in mathematics, 7<sup>th</sup> grade

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Which values of  $k$  cause the lines

$$y = 2x - 5,$$
$$y = x + 2,$$

and  $y = kx - 12$

to intersect in a single point?

**315**

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Roma really likes fantasy and reads three or four pages of a fantasy novel during each break. He never reads during or after classes. He goes to school five days a week, sitting 28 classes weekly. Last week he has read a total of 78 pages during breaks.

**Find the number of breaks during which Roma has read four pages.**

**364**

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The “Pups” company has purchased an automobile on sale at 35% below its original price, and sold it at 25% below its original price.

**Calculate the percentage of acquired profit.**

**419**

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“Tell me, oh famous Pythagoras, how many students attend your talks?”

“This many,” the philosopher responded, “one half studies mathematics, one quarter studies music, one seventh remains silent, and aside from that, there are three women.

**Calculate for yourself how many students I have.”**

**450**

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It takes a squirrel 20 minutes to carry a nut into her nest.

The squirrel runs at 3 m/s with the nut, and at 5 m/s without the nut.

**How far is the nut tree from the nest?**

**454**

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Present the polynomial  $x^4 - 7x^2 + 1$   
as a product of two polynomials  
with whole coefficients.

# • ЛИТЕРАТУРА:

- МАТЕМАТИКА, 7-8 классы

Задания для подготовки к олимпиадам

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