

# Solving Problems With Two Variables

Set up and solve each equation.

If 8 pens and 7 pencils cost \$3.37 while 5 pens and 11 pencils cost \$3.10, how much does each pen and pencil cost?

<p>Let <math>x</math> = cost of 1 pen.</p> $8x + 7y = 337$ $5x + 11y = 310$	<p>Let <math>y</math> = cost of 1 pencil.</p> $40x - 35y = 1,685$ $40x + 88y = 2,480$ $53y = 795$ $y = 15$	$8x + 7 \cdot 15 = 337$ $8x + 105 = 337$ $8x = 232$ $x = 29$
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Pens cost \$.29 and pencils cost \$.15.

1. A rectangle has a perimeter of 18 cm. Its length is 5 cm greater than its width. Find the dimensions.
2. Timmy has 180 marbles, some plain and some colored. If there are 32 more plain marbles than colored marbles, how many colored marbles does he have?
3. A theater sold 900 tickets to a play. Floor seats cost \$12 each and balcony seats \$10 each. Total receipts were \$9,780. How many of each type of ticket were sold?
4. Ryan and Karl spent 28 hours building a tree house. Ryan worked 4 more hours than Karl. How many hours did each work?
5. The difference between seven times one number and three times a second number is 25. The sum of twice the first and five times the second is 95. Find the numbers.
6. The sum of two numbers is 36. Their difference is 6. Find the numbers.
7. The volleyball club has 41 members. There are 3 more boys than girls. How many girls are there?
8. The sum of two numbers is 15. Twice one number equals 3 times the other. Find the numbers.