

# WORD PROBLEMS!

## From Problems to Equations

C

1. Solve each problem. Make sure to:

1. identify and assign a letter to the unknown(s);
2. formulate an equation based upon the information given in the problem;
3. solve the equation;
4. verify the solution and write a complete answer to the problem.

a) Twice a number increased by 17 is 53. What is the number?

<b>unknowns</b>	<b>solution</b>	<b>verification</b>
<b>equation</b>		<b>answer</b>

b) The base of a rectangle is 3 units more than its height. Determine the dimensions of this rectangle, given that its perimeter is 26 units.

<b>unknowns</b>	<b>solution</b>	<b>verification</b>
<b>equation</b>		<b>answer</b>

c) Mrs. Tate wants to give 23 jars of jam to her two children. Anita, who adores jam, will receive 7 jars more than her brother Bruno. How many jars of jam will Anita receive?

<b>unknowns</b>	<b>solution</b>	<b>verification</b>
<b>equation</b>		<b>answer</b>

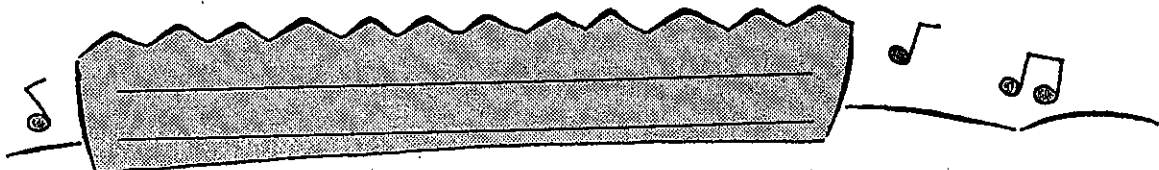
2. Petra is 7 years younger than her brother Ivan. Together, their ages total 43 years. How old is Petra?

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3. There are 43 marbles in a box. Some of the marbles are yellow, and the rest are blue. There are 9 more yellow marbles than blue marbles. How many blue marbles are in the box?

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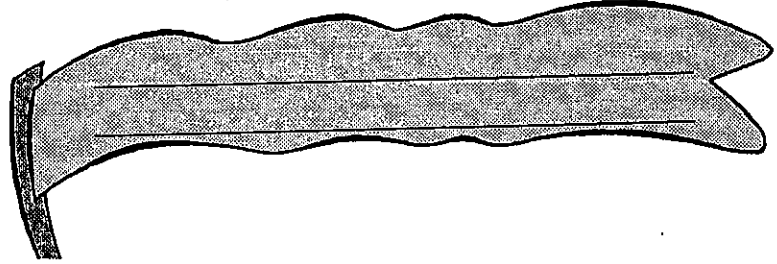
4. On their course option forms 28 students have chosen music class. There are 6 more girls than boys choosing music. How many boys chose music class?



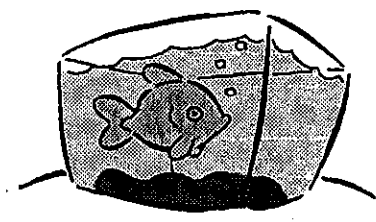
5. The sum of two numbers is 27. If one of the numbers is twice the other, what are the two numbers?

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6. Caroline is 4 years older than her brother Sebastian. The sum of their ages is 30. How old are they?



7. Anthony's aquarium holds 28 fish. He has two kinds of fish: goldfish and tetras. If there are 3 times as many goldfish than tetras, how many tetras are there?

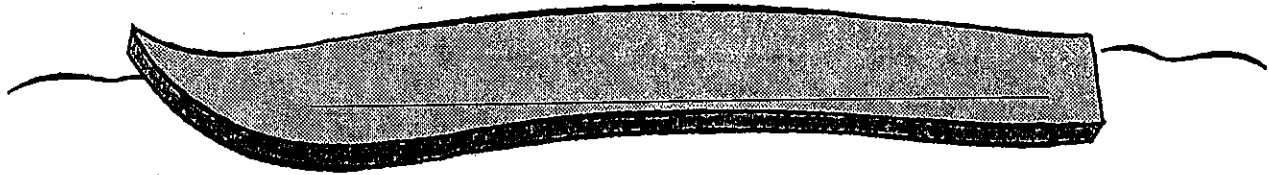


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9. A triangle has an area of  $60 \text{ cm}^2$ . If one of its bases is 15 cm long, determine the corresponding height.

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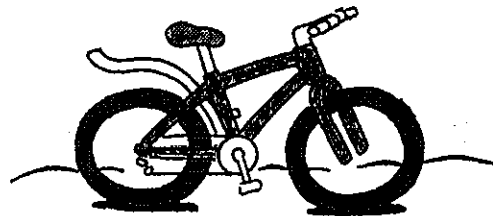
11. Sonia's skis cost \$25 less than three times the cost of her bindings. If she spent \$335 in all, how much did the skis cost?



12. Five years more than a third of Gabe's age equals 21 years. How old is Gabe?

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13. Juan wants to buy a bike that costs \$335. He has \$125 in the bank and is saving \$30 a week from his earnings as a delivery boy. Write and solve the equation showing how long it will take Juan to save up enough to buy the bike.



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14. The sum of 3 consecutive odd numbers is 147. What are these numbers?

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15. In all, Renée and Gladys have collected 160 buttons. Renée has 25 buttons more than twice as many buttons as Gladys. How many buttons do they have each?

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16. A number is 3 more than twice another number. The sum of these numbers is 75. What are the two numbers?

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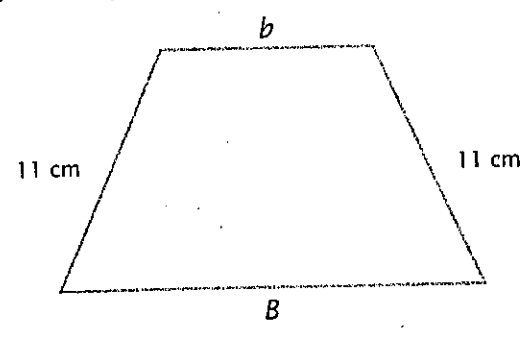
17. A salesperson makes a base salary of \$170 per week plus a 5% commission on sales. If he earned a total of \$430 this week, what were his sales?

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18. The sum of three numbers is 138. The second number is twice the first, and the third is 7 less than the second. What are these numbers?

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19. An isosceles trapezoid has one base that is twice as long as the opposite base. The congruent sides are each 11 cm long. If the perimeter is 49 cm, determine the lengths of the bases.

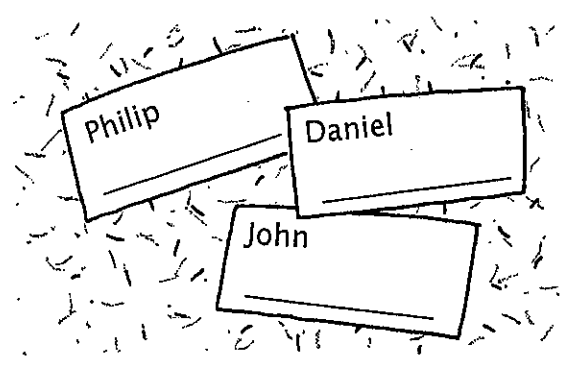


Short base : \_\_\_\_\_  
Long base : \_\_\_\_\_

20. A car uses, on average, 10.5 litres of gas per 100 km. How many litres will the car use to travel 659 kilometres?

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21. A \$40 000 inheritance was divided among 3 brothers, John, Daniel and Philip. John received \$2000 less than Daniel. Daniel received \$3000 more than *Phil*. How much money did each brother receive?



22. A 48-year-old father has a 14-year-old daughter. In how many years will the father's age be twice the daughter's age?

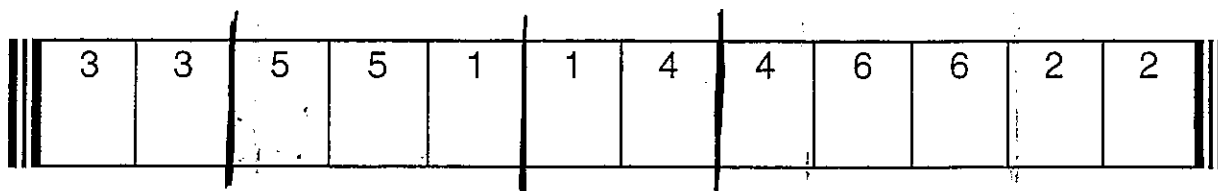
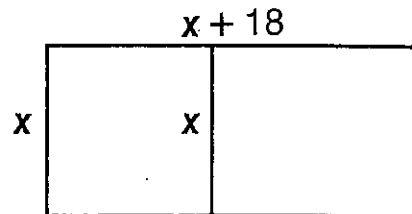
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# Why Did the Sore Tooth Take Up So Much Space?

Solve each problem below. Find your solution in the answer column and notice the two letters next to it. Write these letters in the two boxes at the bottom of the page that contain the number of that problem.

- ① The length of a rectangle is 3 times the width. If the length is decreased by 4 m and the width is increased by 1 m, the perimeter will be 66 m. Find the dimensions of the original rectangle.
- ② The length of a rectangle is 6 cm longer than the width. If the length is increased by 9 cm and the width by 5 cm, the perimeter will be 160 cm. Find the dimensions of the original rectangle.
- ③ The length of a rectangle is 7 m less than twice the width. If the length is decreased by 1 m and the width by 4 m, the perimeter will be 66 m. Find the dimensions of the original rectangle.
- ④ The perimeter of a triangle is 69 cm. Side *a* is 5 cm shorter than side *b*. Side *c* is twice as long as side *a*. Find the length of each side.
- ⑤ The first side of a triangle is 7 cm shorter than twice the second side. The third side is 4 cm longer than the first side. The perimeter is 80 cm. Find the length of each side.
- ⑥ The length of a rectangular field is 18 m longer than the width. The field is enclosed with fencing and divided into two parts with a fence parallel to the shorter sides. If 216 m of fencing are required, what are the dimensions of the outside rectangle? (See diagram to the right.)

AN	32 cm by 38 cm
NA	16 cm, 21 cm, 32 cm
ND	15 cm, 20 cm, 30 cm
SA	9 m by 27 m
DO	25 cm, 16 cm, 29 cm
TO	11 m by 33 m
WA	29 cm, 18 cm, 33 cm
ER	30 cm by 36 cm
ST	40 m by 58 m
CH	36 m by 54 m
TH	20 m by 33 m
IT	15 m by 23 m

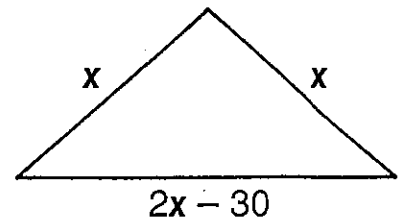


# What's the Quickest Way for an Ant to Go From the Ground to the Tree Trunk?

Solve each problem below. Find your solution in the answer column and notice the letter next to it. Write this letter in each box that contains the number of that problem.

- ① The length of a rectangle is 3 times the width. The perimeter is 96 cm. Find the width and length.
- ② The length of a rectangle is 5 m greater than the width. The perimeter is 150 m. Find the width and length.
- ③ The width of a rectangle is 12 cm less than the length. The perimeter is 156 cm. Find the width and length.
- ④ The length of a rectangle is 2 cm less than 7 times the width. The perimeter is 60 cm. Find the width and length.
- ⑤ The perimeter of a triangle is 76 cm. Side  $a$  of the triangle is twice as long as side  $b$ . Side  $c$  is 1 cm longer than side  $a$ . Find the length of each side.
- ⑥ The first side of a triangle is 8 m shorter than the second side. The third side is 4 times as long as the first side. The perimeter is 26 m. Find the length of each side.
- ⑦ A triangular sail has a perimeter of 25 m. Side  $a$  is 2 m shorter than twice side  $b$ , and side  $c$  is 3 m longer than side  $b$ . Find the length of each side.
- ⑧ The triangle shown at the right is *isosceles*. That is, it has two sides of equal length. The third side is 30 m shorter than twice the length of each congruent side. The perimeter is 570 m. Find the length of each side.

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|---|----------------------|
| Ⓑ | 37 m, 42 m           |
| Ⓘ | 3 m, 11 m, 12 m      |
| Ⓐ | 33 cm, 45 cm         |
| Ⓝ | 8 m, 5 m, 11 m       |
| Ⓔ | 12 cm, 36 cm         |
| Ⓢ | 4 cm, 26 cm          |
| Ⓤ | 31 cm, 43 cm         |
| Ⓜ | 140 cm, 140 m, 250 m |
| Ⓗ | 35 m, 40 m           |
| Ⓒ | 5 cm, 33 cm          |
| Ⓚ | 30 cm, 15 cm, 31 cm  |
| Ⓣ | 150 m, 150 m, 270 m  |
| Ⓛ | 32 cm, 16 cm, 31 cm  |
| Ⓡ | 10 m, 6 m, 9 m       |



8	3	5	1	8	2	1	4	2	6	7	8	1	4	8	7	6	6	8
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## Skill Builder

- 7** The area of a triangle is 60 squared metres. If its base is 12 m, what is the height of the triangle?

**My Calculations**

<b>My Calculations</b>																			

- 8** Billy has \$24.00 in his European handbag. The money is in quarters, \$1's and \$2's. He has 2 fewer \$2's than \$1's, and twice as many quarters as \$1's. How many quarters, \$1's, and \$2's does Billy have?

**My Calculations**

<b>My Calculations</b>																			

- 9** Billy leaves Montreal at 6 am to go to Toronto and travels at an average speed of 60km/hr. One hour later, Sally leaves from the same place at an average speed of 100km/hr toward Toronto too. At what time and distance does Sally reach Billy?

**My Calculations**

<b>My Calculations</b>																			

- 10** Sally pays \$5 for 4 apples and 3 oranges. If an orange costs 15 cents more than an apple, how much would Sally pay for 5 apples and 2 oranges?

**My Calculations**

<b>My Calculations</b>																			