



# HOMWORK

## Homework Problems

Circle the homework problems assigned to you by the computer, then complete them below.



### Explain

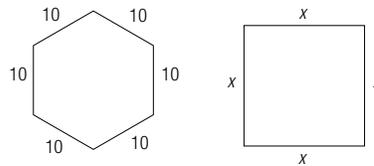
#### Number and Age

1. The sum of four consecutive integers is  $-118$ . What are the four numbers?
2. The sum of three consecutive odd integers is  $-1$ . What is the larger integer?
3. The sum of three consecutive integers is  $81$ . What are the three integers?
4. Latoya is twice as old as her cousin was 3 years ago. If the sum of their ages now is  $15$ , how old is each one of them?
5. Mount Everest is the tallest mountain in the world. It is  $237$  meters higher than K2, the second tallest mountain. If the sum of their heights is  $17,459$  meters, how tall is each mountain?
6. Eleven years ago Hye was four times as old as her brother. In 1 year she will be twice as old as he is now. What are their ages now?
7. A molecule of propane has 26 atoms. If there are 6 fewer hydrogen atoms than 3 times the number of carbon atoms, how many atoms of each does it contain?
8. Ariel is 2 years older than twice Juan's age and Felix is 6 years older than Juan. If the sum of their ages is  $80$ , how old is each person?
9. One number is 9 more than 3 times another. If their sum is  $53$ , what is the smaller number?
10. When John F. Kennedy was sworn in as President, he was 1 year older than Teddy Roosevelt was when Roosevelt took the office. If the sum of their ages when each became President was  $85$ , how old was Kennedy when he was sworn in?

11. The average surface temperature on Earth (in degrees Celsius) is  $70$  degrees more than the average surface temperature on Mars. If the sum of the average temperatures on the two planets is  $-20$  degrees, what is the average surface temperature on Mars?
12. Toshihiko is 4 years more than twice as old as Kyoko. If the sum of their ages is  $79$ , how old is Kyoko?

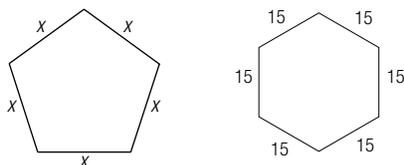
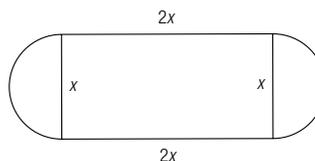
#### Geometry

13. The length of the longest leg of a triangle is twice the length of the shortest leg. The remaining leg is 2 inches longer than the shortest leg. If the perimeter of the triangle is  $26$  inches, how long is each leg?
14. A regular hexagon (which has 6 sides all the same length) has the same perimeter as a square. If the length of a side of the hexagon is  $10$  centimeters, how long is one side of the square?



15. The length of a rectangle is 7 inches less than 3 times its width. If the perimeter of the rectangle is  $50$  inches, what are its dimensions?
16. The distance around one circular track is three times as far as the distance around a second circular track. If the sum of the distances around both tracks is  $80\pi$  yards, what is the distance around the larger track?

17. If one side of a square is increased by 11 feet and an adjacent side is decreased by 5 feet, a rectangle is formed whose perimeter is 52 feet. Find the length of a side of the original square.
18. The measure of the smallest angle of a right triangle is 15 degrees less than half the measure of the next smallest angle. What is the measure of each angle?
19. The length of a rectangle is 12 feet less than three times its width. If the perimeter of the rectangle is 24 feet, what are its dimensions?
20. A regular pentagon (which has 5 sides all the same length) has the same perimeter as a regular hexagon (which has 6 sides all the same length). If the length of a side of the hexagon is 15 feet, how long is one side of the pentagon?
22. The measure of one angle of a triangle is 20 degrees more than the measure of the smallest angle. The measure of another angle is 8 degrees less than twice the measure of the smallest angle. What is the measure of each angle?
23. A rectangular track was being built so that the length of one of the short sides was half the length of one of the long sides. The track was supposed to be 300 yards around. At the last minute, the plans for the track were changed and a semicircle (half a circle) was added at each of the short ends. What is the distance around the track after the plans were modified?



21. When one side of an isosceles triangle (which has two equal sides) is increased by 3 inches, the triangle becomes an equilateral triangle (which has three equal sides). If the perimeter of the triangle is initially 18 inches, how long is each side of the original triangle?
24. A regular octagon (which has 8 sides all the same length) has the same perimeter as a regular hexagon (which has 6 sides all the same length). If the length of one of the sides of the octagon is 1 inch less than a side of the hexagon, what is the length of a side of each figure?



## APPLY

### Practice Problems

Here are some additional practice problems for you to try.

#### Number and Age

1. The sum of two numbers is 42. One number plus 2 times the other number is 57. What are the numbers?
2. The sum of two numbers is 43. One number plus three times the other number is 65. What are the numbers?
3. The sum of two numbers is 45. Their difference is 9. What are the numbers?
4. The sum of two numbers is 24. Their difference is 52. What are the numbers?
5. The sum of two numbers is 16. Their difference is 40. What are the numbers?
6. The difference between two numbers is 55. Four times the smaller number plus five times the larger number is 176. What are the numbers?
7. The difference between two numbers is  $-38$ . Two times the smaller number minus five times the larger number is  $-217$ . What are the numbers?
8. The difference between two numbers is 80. Three times the smaller number plus four times the larger number is  $-254$ . What are the numbers?
9. The sum of three consecutive integers is 96. What are the numbers?
10. The sum of four consecutive integers is  $-226$ . What are the numbers?
11. The sum of four consecutive integers is 114. What are the numbers?
12. The sum of three consecutive even integers is 444. What are the numbers?
13. The sum of four consecutive even integers is  $-316$ . What are the numbers?
14. The sum of four consecutive odd integers is  $-32$ . What are the numbers?
15. David is 3 years older than Sean. The sum of their ages is 15. How old is Sean?
16. Alexandra is 8 years younger than Natasha. The sum of their ages is 30. How old is Alexandra?
17. Jeremy is six years older than Barbara. The sum of their ages is 68. How old is Barbara?
18. Carl is 9 years older than his cousin Jenny. If the sum of their ages is 77, how old is each one of them?
19. Miriam is ten years younger than her husband Edward. If the sum of their ages is 106, how old is each one of them?
20. Pietro is 12 years younger than Annetta. If the sum of their ages is 62, how old is each one of them?
21. Mark is three times as old as Luke. In 5 years Mark will be two times as old as Luke is in 5 years. How old is each one now?
22. Serge is five times as old as his daughter Katia. In 12 years Serge will be three times as old as Katia is in 12 years. How old is each one now?
23. Svetlana is four times as old as Boris. In 10 years Svetlana will be three times as old as Boris is in 10 years. How old is each one now?
24. Brandon is three times as old as Caitlin. Eighteen years ago, Brandon was six times as old as Caitlin was eighteen years ago. How old is each one now?
25. Masato is twice as old as Kim. Ten years ago, Masato was three times as old as Kim was ten years ago. How old is each one now?

26. Gerhard is twice as old as Isolde. Sixteen years ago, Gerhard was four times as old as Isolde was sixteen years ago. How old is each one now?
27. In 7 years, Maria will be four times as old as Angelica will be then. The sum of their ages now is 71. How old will each of them be in 5 years?
28. In 5 years, Alessandro will be three times as old as Frederico will be then. The sum of their ages now is 86. How old will each of them be in 3 years ?
36. The longest side of a triangle is 7 cm longer than the shortest side. The remaining side is 3 cm shorter than the longest side. The perimeter of the triangle is 29 cm. What is the length of each side?
37. The shortest side of an isosceles triangle is 4 cm shorter than the length of each of the equal sides. The perimeter of the triangle is 26 cm. What is the length of each side?
38. The shortest side of an isosceles triangle is 5 inches shorter than the length of each of the equal sides. The perimeter of the triangle is 43 inches. What is the length of each side?

## Geometry

29. An isosceles triangle has two angles whose measures are equal. If the largest angle of the triangle measures 85 degrees, what are the measures of the other two angles?
30. If the largest angle of an isosceles triangle measures 68 degrees, what are the measures of the other two equal angles?
31. The sum of the angle measures of a triangle is  $180^\circ$ . The smallest angle in a triangle is 64 degrees less than the measure of the largest angle. The measure of the remaining angle is 8 degrees more than the measure of the smallest angle. What is the measure of each angle?
32. The measure of the smallest angle in a triangle is 50 degrees less than the measure of the largest angle. The measure of the remaining angle is 10 degrees more than the measure of the smallest angle. What is the measure of each angle?
33. The measure of the largest angle in a triangle is 55 degrees more than the smallest angle. The measure of the remaining angle is 5 degrees less than the measure of the largest angle. What is the measure of each angle?
34. The shortest side of a triangle is 3 inches shorter than the longest side. The remaining side is 2 inches longer than the shortest side. The perimeter of the triangle is 20 inches. What is the length of each side? (Note: The perimeter of a figure is the distance around the outside of the figure.)
35. The longest side of a triangle is 12 cm longer than the shortest side. The remaining side is 2 cm shorter than the longest side. The perimeter of the triangle is 31 cm. What is the length of each side?
39. The shortest side of an isosceles triangle is half the length of each of the equal sides. The perimeter of the triangle is 80 inches. What is the length of each side?
40. The length of a rectangle is 10 cm longer than its width. The perimeter of the rectangle is 68 cm. What are the length and width of the rectangle? (Note: The perimeter of a rectangle is the distance around the outside of the rectangle.)
41. The width of a rectangle is 4 inches shorter than its length. The perimeter of the rectangle is 36 inches. What are the length and width of the rectangle?
42. The width of a rectangle is 9 cm shorter than its length. The perimeter of the rectangle is 40 cm. What are the length and width of the rectangle?
43. The length of a rectangle is 10 cm less than five times its width. The perimeter of the rectangle is 52 cm. What are the length and width of the rectangle ?
44. The length of a rectangle is 23 cm less than three times its width. The perimeter of the rectangle is 82 cm. What are the length and width of the rectangle?
45. The length of a rectangle is 2 inches more than twice its width. The perimeter of the rectangle is 28 inches. What are the length and width of the rectangle?
46. The width of a rectangle is 52 inches less than four times its length. The perimeter of the rectangle is 51 inches. What are the length and width of the rectangle?
47. The width of a rectangle is 25 inches less than 3 times its length. The perimeter of the rectangle is 38 inches. What are the length and width of the rectangle?

48. The width of a rectangle is 3 more than half its length. The perimeter of the rectangle is 60 cm. What are the length and width of the rectangle?
49. The perimeter of an equilateral triangle (which has three sides, all the same length) is four times the perimeter of a regular hexagon (which has 6 sides, all the same length). The length of a side of the triangle is 10 cm more than six times the length of a side of the hexagon. What is the perimeter of the triangle? What is the perimeter of the hexagon?
50. The perimeter of a square is three times the perimeter of a regular hexagon (which has 6 sides all the same length). The length of a side of the square is 2 inches more than four times the length of a side of the hexagon. What is the perimeter of the square? What is the perimeter of the hexagon?
51. The length of a rectangular playground is four times its width. The perimeter of the playground is 250 feet. What is the area of the play ground? (Note: The area of a rectangle is found by multiplying its length by its width.)
52. The length of a rectangular park is five times its width. The perimeter of the park is 108 miles. What is the area of the park?
53. The length of a rectangular floor is six times its width. The perimeter of the floor is 210 feet. What is the area of the floor?
54. The length of a rectangular pool is 4 m more than twice its width. The perimeter of the pool is 20 m. What is the area of the pool?
55. The length of a rectangular garden is 3 feet more than twice its width. The perimeter of the garden is 78 feet. What is the area of the garden?
56. The width of a rectangular window is 10 feet less than twice its length. The perimeter of the window is 28 feet. What is the area of the window?



## Practice Test

Take this practice test to be sure that you are prepared for the final quiz in Evaluate.

1. One number is 3 more than another. Twice the larger number minus the smaller number is 15. What are the two numbers?
2. Abe and his younger sister are 3 years apart in age. If the sum of their ages will be 35 next year, what are their ages now?
3. Five years ago, Felipe was half of Carolina's age. At that time, the sum of their ages was 30. How old is Felipe now?
4. The sum of three consecutive odd integers is 5 less than 4 times the smallest such integer. What are the three odd integers?
5. A rectangular park was built so that its length is 3 times its width. The perimeter of the park is 24 yards. What are the width and length of the park?
6. The measure of one angle of a triangle is 10 degrees more than the measure of the smallest angle. The measure of the third angle is 50 degrees more than the measure of the smallest angle. What are the measures of the angles of the triangle?
7. The distance around a rectangular city block is 280 yards. If the length of the block is 10 yards less than twice its width, what are the dimensions of the block?
8. The perimeter of a certain square is the same as the perimeter of a certain equilateral triangle. (An equilateral triangle is a triangle in which all three sides have the same length.) Each side of the triangle is 1 inch longer than a side of the square. How long is a side of the square? How long is a side of the triangle?