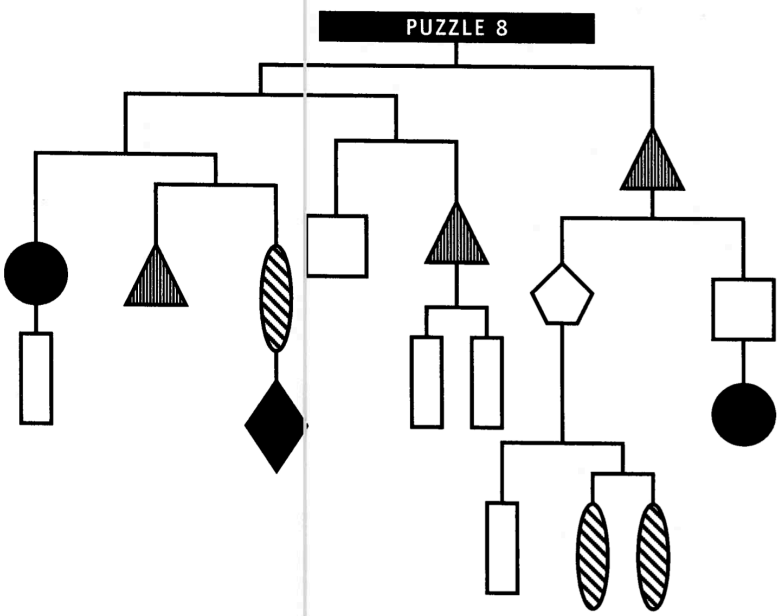
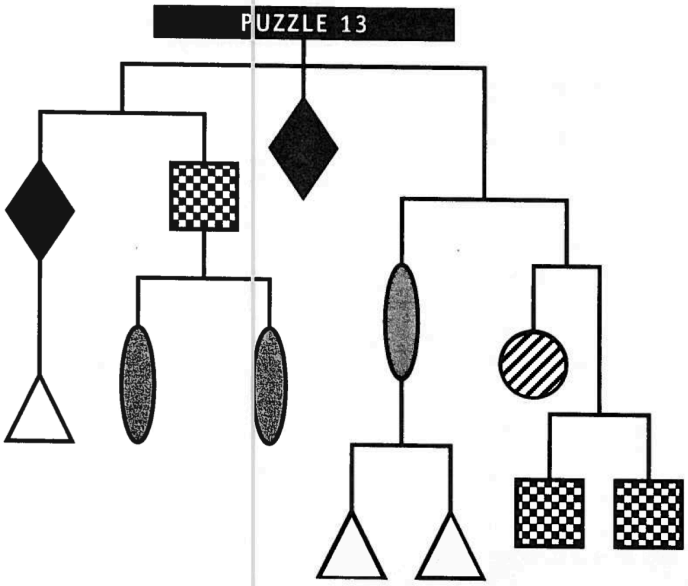
PUZZLE 8



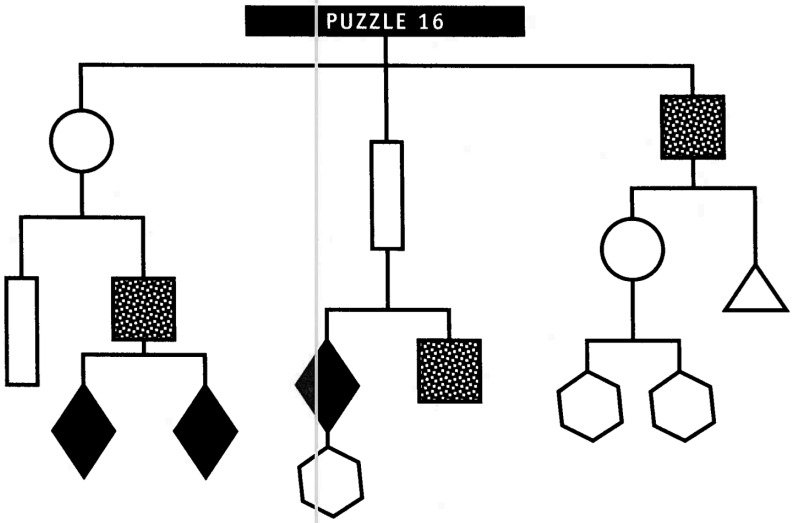
Discover the value of each of the shapes.
The total weight is 64. Clue:

PUZZLE 13



Discover the value of each of the shapes.
The total weight is 75.

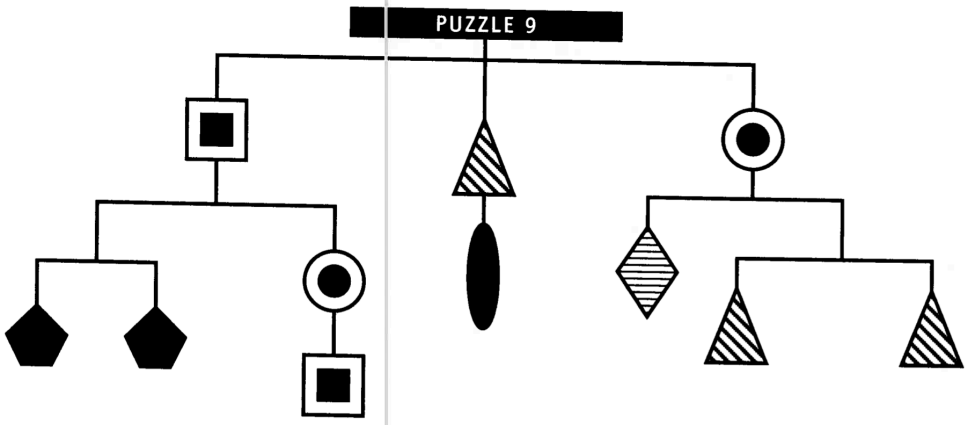
PUZZLE 16



Discover the value of each of the shapes. The total weight is 57. Each of the three arms is equal in weight. Additional clue:

▯ **is a multiple of three.**

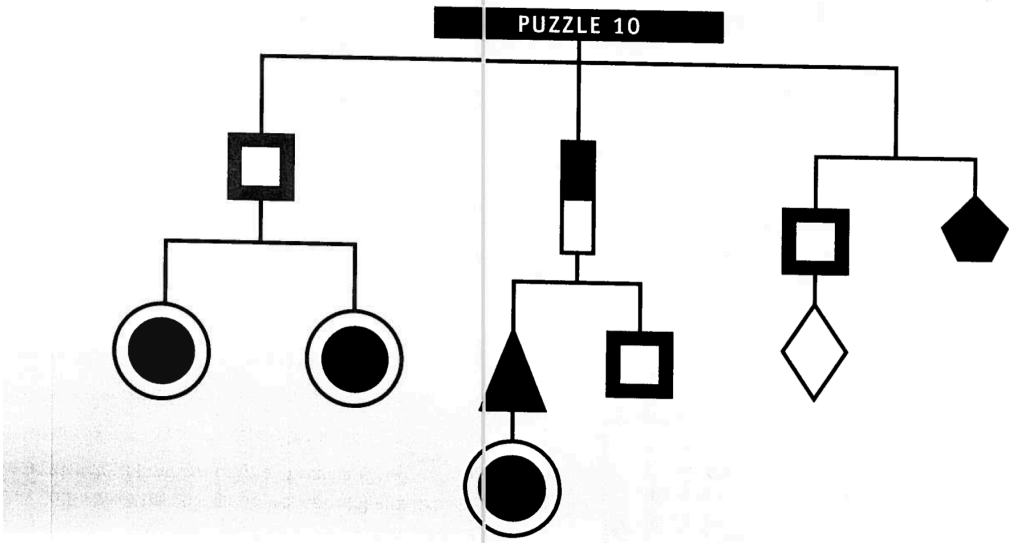
PUZZLE 9



Discover the value of each of the shapes. The total weight is 129. Each of the arms is equal in weight. Additional clue:

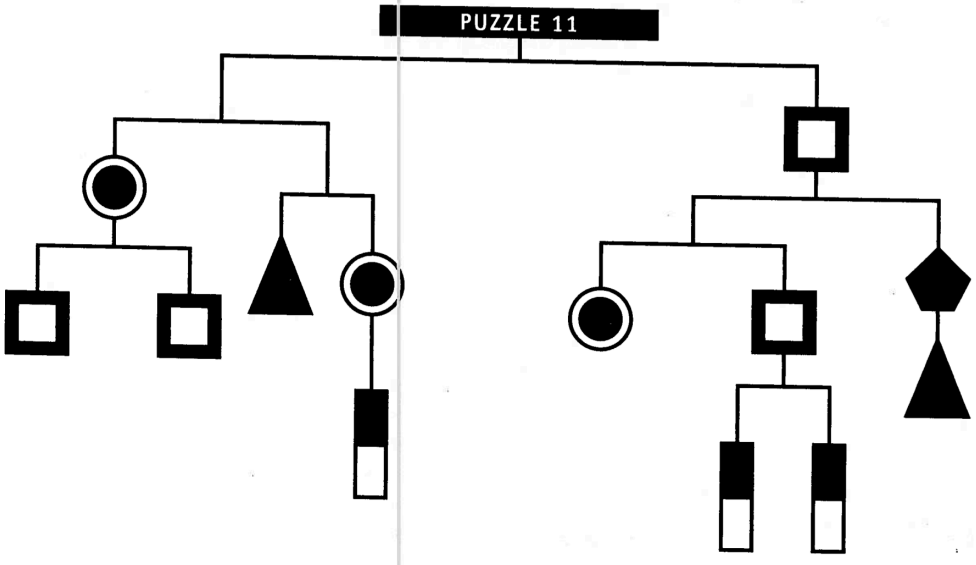
⬮ = 5▣

PUZZLE 10



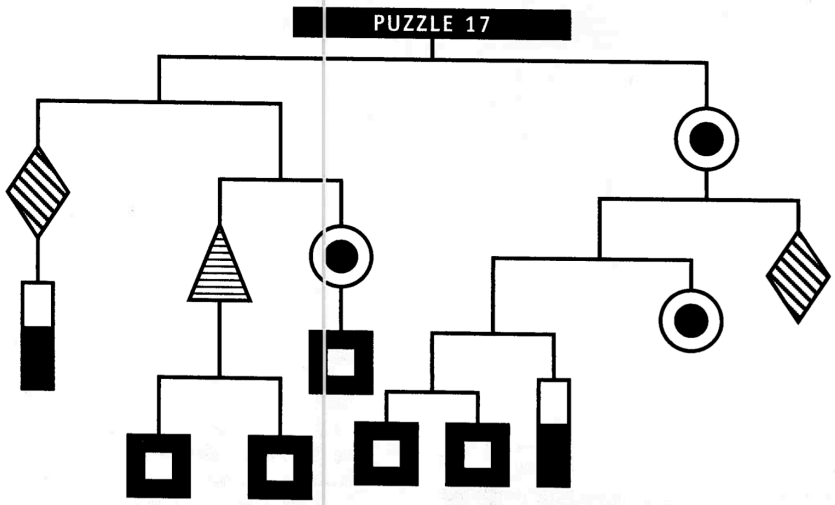
Discover the value of each of the shapes. The total weight is 54. The three arms are equal in weight.

PUZZLE 11



Discover the value of each of the shapes. The total weight is 56.

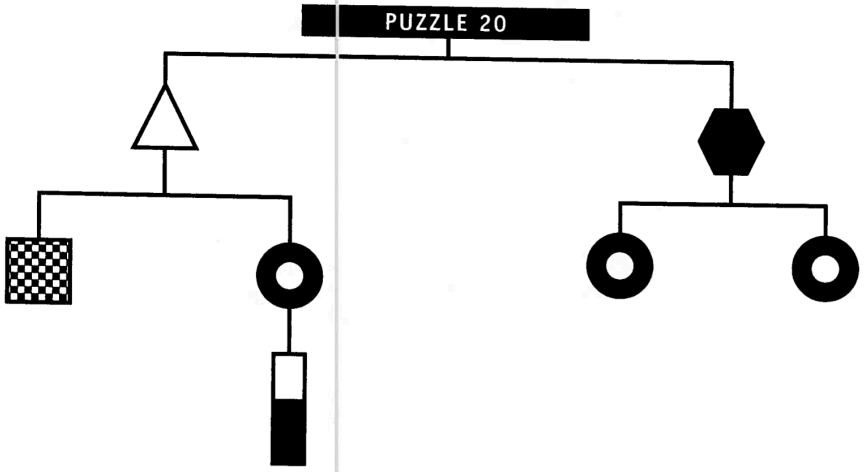
PUZZLE 17



Discover the value of each of the shapes.
The total weight is 120. Clue:

All shapes are multiples of ◘.

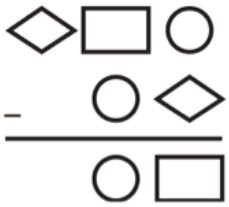
PUZZLE 20



Discover the value of each of the shapes.
The total weight is 30. Clues:

3 ▩ < ⬢ △ − ▩ = ▮

Ellie and Emma live 1.04 miles from each other. They decide to meet by walking toward each other, Ellie at 2.4 mi/h and Emma at 2.8 mi/h. If they both leave at 8:00 a.m., at what time in the morning will they meet?



In the subtraction problem shown, the shapes ◇, □, and ○ each represent a different digit. What is the value of □◇ ÷ ○?

In the addition problem shown, each letter stands for a different digit. If T = 3, what is the value of the four-digit number MATH?

$$\begin{array}{cccc} & G & E & T \\ + & T & H & E \\ \hline M & A & T & H \end{array}$$

27. There are seven cities in Wonderland. Each pair of cities is connected by one road, either visible or invisible. On the map of Wonderland, there are only twelve visible roads, as shown. Alice has magical glasses: when she looks at the map through these glasses she only sees the roads that are otherwise invisible. How many invisible roads can she see?

(A) 38 (B) 21 (C) 11 (D) 9 (E) 7

29. A triangle is divided into four triangles and three quadrilaterals by three straight line segments, as shown. The sum of the perimeters of the three quadrilaterals is equal to 25 cm. The sum of the perimeters of the four triangles is equal to 20 cm. The perimeter of the whole triangle is equal to 19 cm. What is the sum of the lengths of the three straight line segments?

(A) 11 (B) 12 (C) 13 (D) 15 (E) 16