

Module 7 Lesson 3

Try This 1 – 6 Possible Solutions

TT 1. Answers may vary. Here are two possible arrangements. The first illustration shows a balanced scale. On the left pan are seven squares. To get this, replace the two original circles with 2 squares each, so we have the original 3 squares and then the new 4 squares that makes 7 squares. On the right pan is a 63-kg mass.

The second illustration also shows a balanced scale. On the left pan are three circles and one square. To get this, they replace two squares with one circle each. So 6 of the squares are replaced with 3 circles, with one square left over.

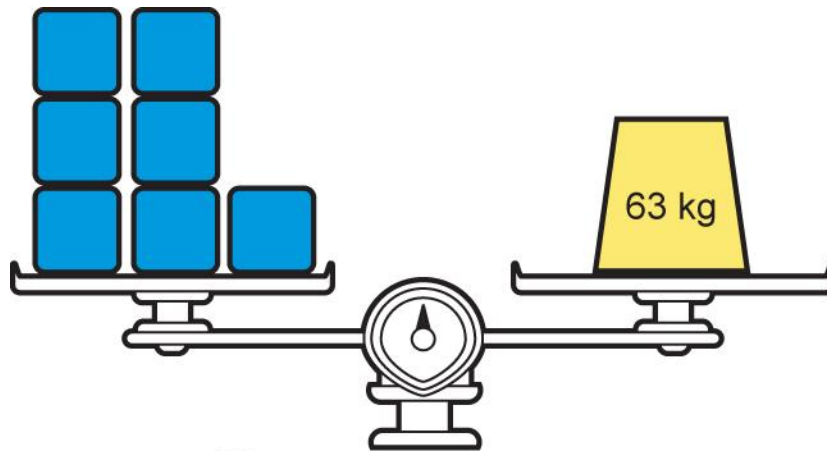


figure 1

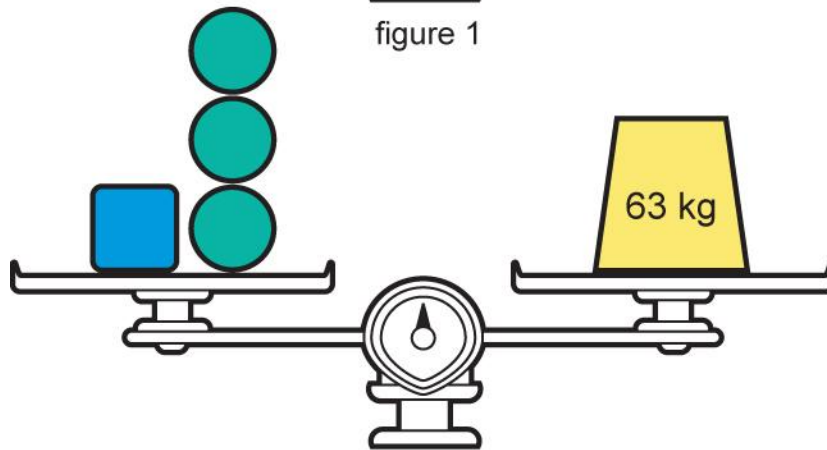


figure 2

TT 2.

- Replace all the circles with squares. Then divide the mass of the object on the other scale by the number of squares. The quotient will be the mass of a square.
- Based on figure 2, use the relationship that one circle is **twice** the mass of a square.

TT 3. Based on the procedure described in TT 2, the mass of the square is 9 kg and the mass of the circle is 18 kg.

TT 4. $3x + 2y = 63$ ← Equation 1
 $y = 2x$ ← Equation 2

TT 5. You could substitute the value of y (which is $2x$) from Equation 2 for y in Equation 1. So this would yield this equation:

$$3x + 2(2x) = 63, \text{ which can be simplified to } x = 9$$

Now substitute 9 for x in Equation 2 and solve for y :

$$\begin{aligned} y &= 2x && \leftarrow \text{Equation 2} \\ y &= 2 \cdot 9 && \leftarrow \text{Substitute the value of 9 for } x. \\ y &= 18 \end{aligned}$$

So, $x = 9$ and $y = 18$.

TT 6. Based on the values found for the variable x and y , the mass of the square is 9 kg and the mass of the circle is 18 kg.