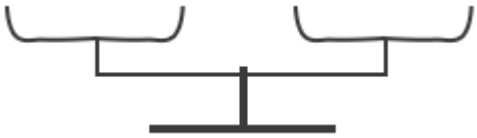
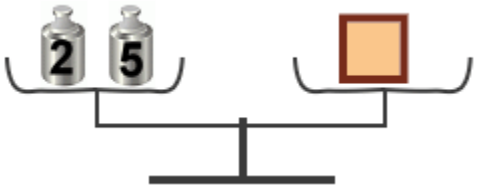
Scales Problems

This is a pan balance or scales. Things go into the two "pans", and the heavier pan will go down, like in a seesaw.

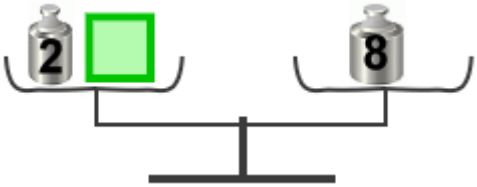
If the two things weigh the same, the balance stays balanced.



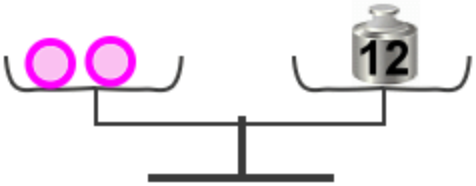
1. Solve how much each geometric shape "weighs". You can use either pounds or kilograms.



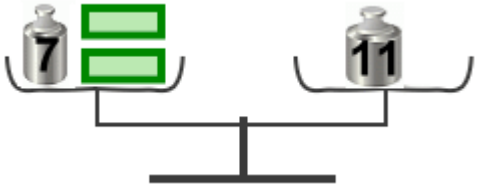
a. The square weighs _____



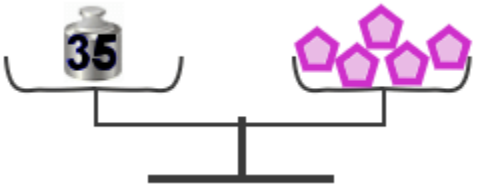
b. The square weighs _____



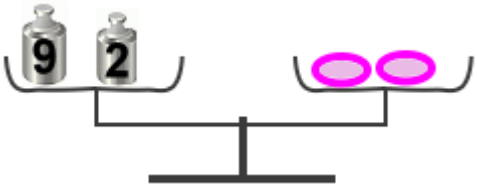
c. One ball weighs _____



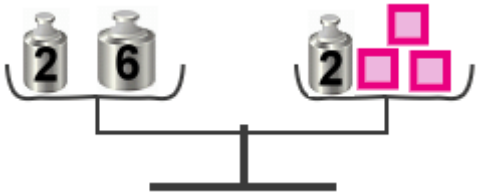
d. One rectangle weighs _____



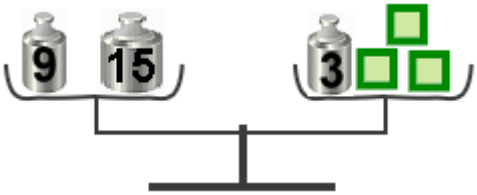
e. One pentagon weighs _____



f. One oval weighs _____



g. One square weighs _____

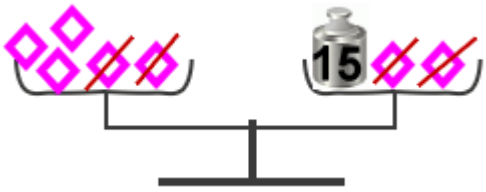


h. One square weighs _____

If there are "unknown shapes" on both sides, use this "trick":

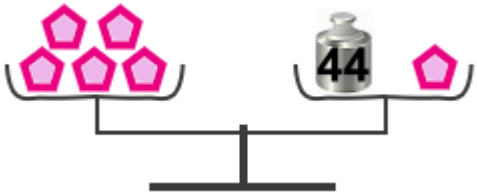
Take away the same amount of unknown shapes from both sides.

The scale WILL continue to stay balanced!

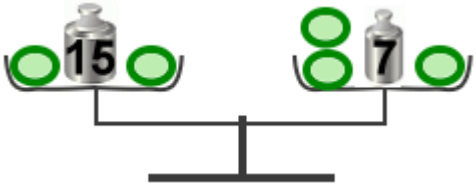


Take away two diamonds from both sides. Then we see that *three* diamonds weigh 15.

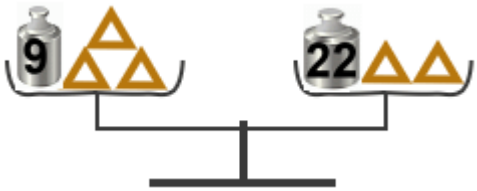
2. Solve.



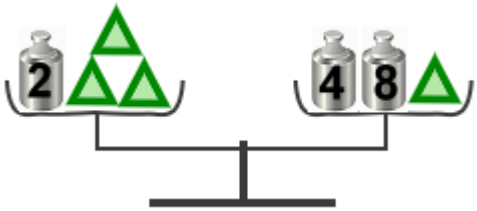
a. One pentagon weighs _____



b. One oval weighs _____

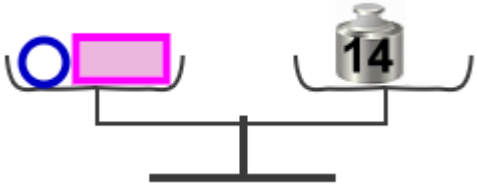


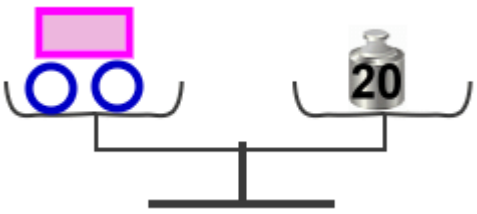
c. One triangle weighs _____



d. One triangle weighs _____

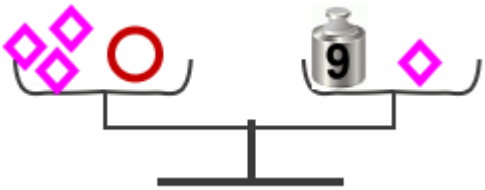
3. Solve. These are trickier. Use *both* balances to figure out the *two* unknown shapes.

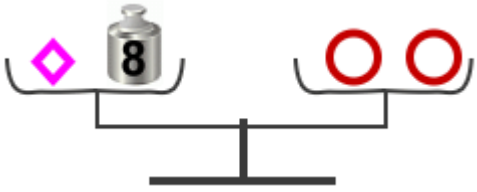




a. One rectangle weighs _____

One circle weighs _____

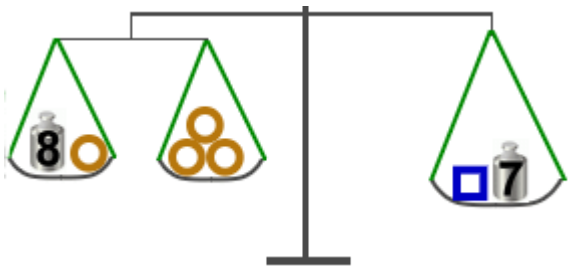




b. One circle weighs _____

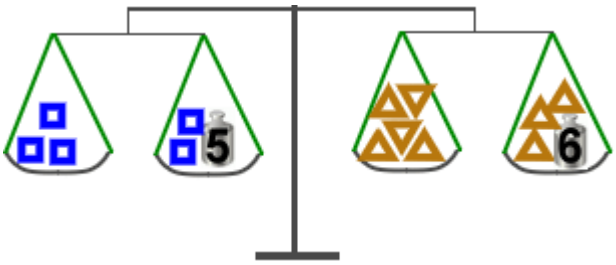
One diamond weighs _____

4. A few more with double scales...



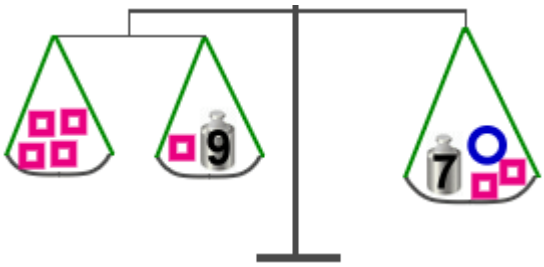
a. One circle weighs _____

One square weighs _____



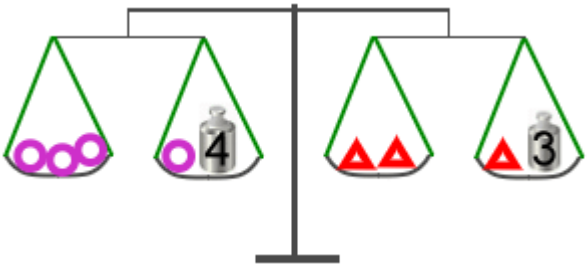
b. One square weighs _____

One triangle weighs _____



c. One square weighs _____

One circle weighs _____

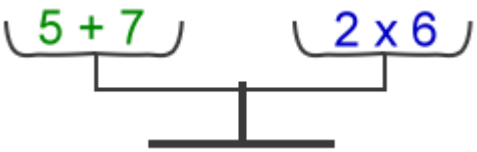


d. One circle weighs _____

One triangle weighs _____

In mathematics, the equal sign "=" is like a scales that is balanced. Something is on the right side, and something is on the left side, and they are equal or "balanced"

$5 + 7 = 2 \times 6$



5. Find the unknown number that goes on the empty line.

a. $78 + ___ = 148$

$160 = ___ + 90$

$50 - ___ = 32$

b. $7 + 6 + 6 = ____ - 10$

$5 + 5 + 5 + ___ = 2 \times 12$

$16 + 19 = 2 \times ____ + 1$

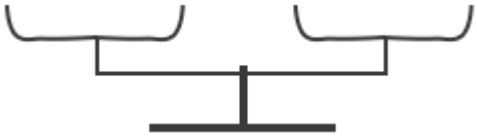
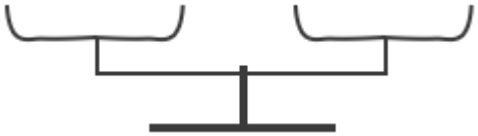
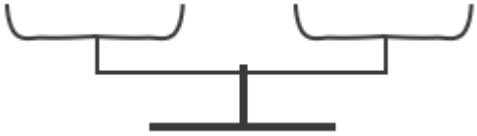
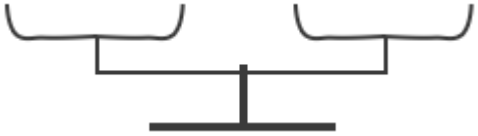
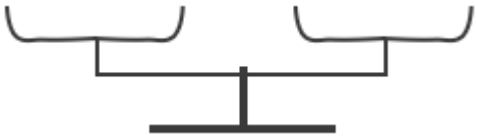
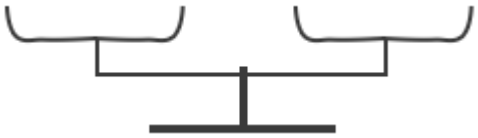
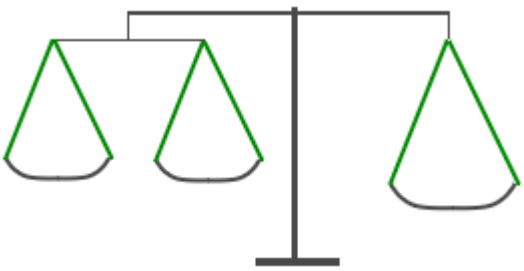
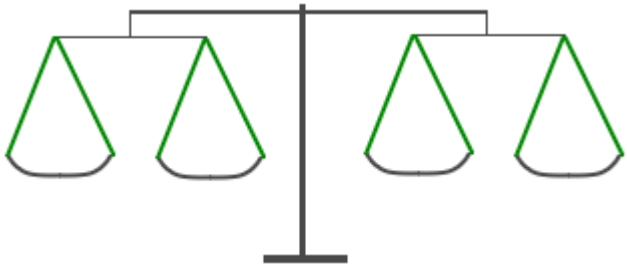
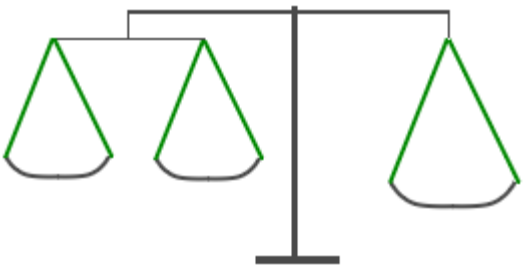
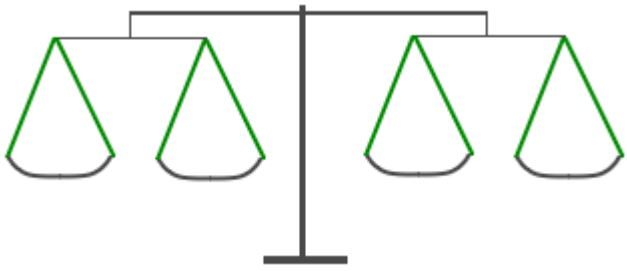
c. $2 \times 50 = 40 + ____$

$7 \times 6 = 2 \times ____$

$4 \times 6 - 7 = 2 \times ____ + 1$

On the next page you will find empty scales pictures. You can print out the page and devise your own problems. But be careful! If you just make random problems, the solutions are likely to be fractions. See also:

Balance word problems from Math Kangaroo

http://www.mathplayground.com/algebraic_reasoning.html - weighing scales game that practices algebraic reasoning

http://illuminations.nctm.org/ActivityDetail.aspx?ID=33 - an interactive pan balance with shapes.