

## WARM UP

*Make friends with parenthesis.*

**1.**

Make sure you worked out the operations in the right order:

$$\begin{array}{lll}
 4 \times 3 + 2 = \underline{\hspace{2cm}} & 12 - 3 \times 2 = \underline{\hspace{2cm}} & 5 \times 4 - 2 = \underline{\hspace{2cm}} \\
 4 + 3 \times 2 = \underline{\hspace{2cm}} & (12 - 3) \times 2 = \underline{\hspace{2cm}} & 5 \times (4 - 2) = \underline{\hspace{2cm}} \\
 (4 + 3) \times 2 = \underline{\hspace{2cm}} & 12 \times 2 - 3 \times 2 = \underline{\hspace{2cm}} & 5 \times 4 - 5 \times 2 = \underline{\hspace{2cm}}
 \end{array}$$

**2.**

Write down an expression which matches the statement.

- a) 11 added to the difference of 7 and 4 \_\_\_\_\_
- b) 12 subtracted from the product of 12 and 3 \_\_\_\_\_
- c) the product of 6 and 7 added to the product of 8 and 9 \_\_\_\_\_
- d) the quotient of 16 and 4 was subtracted from a product of 5 and 6  
\_\_\_\_\_

**3.**

Insert parenthesis where needed to make equalities correct:

$2 + 4 \times 6 + 8 = 34$

$2 + 4 \times 6 + 8 = 44$

$2 + 4 \times 6 + 8 = 58$

$2 + 4 \times 6 + 8 = 84$

**4.**

Simplify:

$17 - 24 \div 2 + 4 \times 3 = \underline{\hspace{4cm}}$

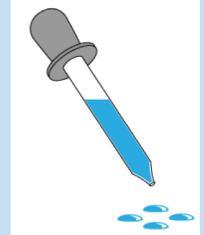
$(6 \times 4) \div 12 - 72 \div 8 + 9 = \underline{\hspace{4cm}}$

## REVIEW

**Capacity: liters (L) and milliliters (mL):**

$1\text{L} = 1,000\text{ mL}$

This bottle holds 1 liter of water.



A milliliter is about 20 drops of water.

**Weight: grams, kilograms, tons:**

$1\text{ kilogram (kg)} = 1,000\text{ grams (g)}$

$1\text{ ton (1t)} = 1,000\text{ kg}$

A paperclip has a weigh about 1g.



A big textbook – about 1kg



A small car weighs about 1 ton.

**Length: kilometers, meters, centimeters, millimeters:**

$10\text{mm} = 1\text{cm}$

$10\text{cm} = 1\text{dm}$

$10\text{dm} = 1\text{m}$

$1,000\text{m} = 1\text{km}$

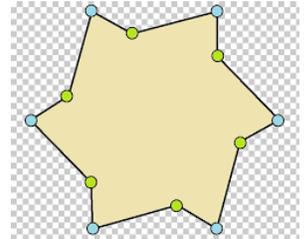
A fingernail is about **one centimeter wide****One meter** equals roughly one **long** step of an adult man or shoulder to opposite wrist of an adult**One kilometer** equals about 12 minutes' walk or approximate length of Golden Gate Bridge.





9. To get one glass of freshly squeezed orange juice, we need to take 4 oranges. How many oranges do we need to take to make 10L of orange juice? ( 1L is 4 full glasses) \_\_\_\_\_
- \_\_\_\_\_

10. The measure of the interior angles of dodecagon add up to 1,800 degrees. If dodecagon has 3 right angles and the other 9 angles are all equal, what is the degree measure of the nine equal angles?



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Did you know ...

*Adopted from article, written by Editors of Encyclopedia Britannica*

The metric system was first developed in France during the French Revolution. A French law passed in 1795 defined five units of measure. Three of these names are still in use today. They are the **meter**, which is the unit of length, the **gram** that is the unit of mass and the **liter**, which is the unit of volume.

According to the law, all metric units were derived from the metre, including the gram for weight (one cubic centimetre of water at its maximum density) and the litre for capacity (1/1,000 of a cubic metre).

Greek prefixes were established for multiples of 10, *myria* (10,000), *kilo* (1,000), *hecto* (100), and *deca* (10), while Latin prefixes were selected for the submultiples, *milli* (0.001), *centi* (0.01), and *deci* (0.1). Thus, a kilogram equals 1,000 grams, a millimetre 1/1,000 of a metre.

The meter was originally defined as being  $\frac{1}{10,000,000}$  of the distance between the North Pole and the Equator on the meridian that passed through Paris. In 1799, a platinum bar that was equal to this length was made and became the "prototype meter"

Not until 1875 did an international conference meet in Paris to establish an International Bureau of Weights and Measures. The Treaty of the Metre signed there provided for a permanent laboratory in Sèvres, near Paris, where international standards are kept, national standard copies inspected, and metrological research conducted. The General Conference on Weights and Measures (CGPM), with diplomatic representatives of some 40 countries, meets every six years to consider reform. The conference selects 18 scientists who form the International Committee for Weights and Measures that governs the bureau.

In 1960 the rules for the metric system were revised. The revised system was called the "International System of Units" (which is often written "SI" for short). The definition of SI also included rules for writing SI quantities. These rules are the same for all languages.

The United States, Myanmar (Burma) and Liberia do not use the metric system, making up 5% of the world 's population not using the system.



In the metric system, all units have a "symbol". Symbols are a shorthand way of writing the names of units. Everybody uses the symbol "m" for meter, "km" for "kilometer", "l" for liter, "ml" for milliliter, "g" for gram, etc.

Forty feet underground in Gaithersburg, Maryland, in a bright white laboratory that requires three separate keys to enter, the United States stores a precious collection of small, shiny metal cylinders that literally define the mass of everything in this country. Seven copies of the International Prototype Kilogram (has been housed in International Bureau of Weights and Measures in Sèvres, France since 1889) are stored in the National Institutes of Standards and Technology (NIST).

