Grade 6

PATTERNING & ALGEBRA: SOLVING EQUATIONS

Don't forget to play the *Variable Stopwatch* game first! Go to *mathfrog.ca* for the link.

1. Find the unknown number, *n*, in each equation:

a) $3 + n = 20$ $n =$ _____   f) $9n = 99$ $n =$ _____

b) $n + 8 = 24$ $n =$ _____   g) $2.5n = 7.5$ $n =$ _____

c) $n - 17 = 30$ $n =$ _____   h) $1.6n = 6.4$ $n =$ _____

d) $211 - n = 201$ $n =$ _____   i) $3n = 7.5$ $n =$ _____

e) $14n = 28$ $n =$ _____   j) $7n = 4.9$ $n =$ _____

2. Match an equation on the left with an equation on the right. (Matching equations have the same *x* value.)

a) $16 + x = 20$ i) $12x = 132$

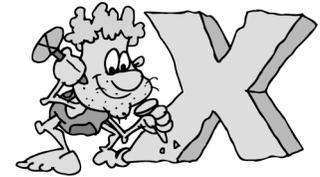b) $6x = 36$ ii) $7x = 28$
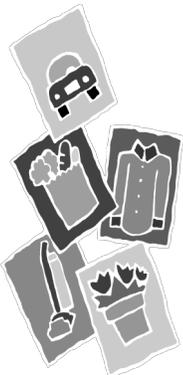
c) $x + 15 = 26$ iii) $24x = 48$

d) $11x = 33$ iv) $x + 35 = 38$
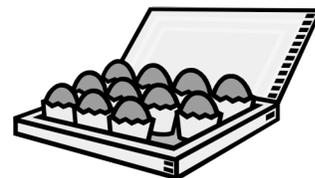
e) $19 + x = 21$ v) $x - 5 = 1$

3. Claire had 7 trading cards. Her friend Firas gave her more trading cards for her birthday. Claire now has 15 cards. Create and solve an equation to find how many trading cards Firas gave Claire?

DID YOU KNOW?

The word *algebra* comes from *"ilm al-jabr w'al Maqa balah"* (meaning "the science of cancellation and reduction") by the Iranian Mathematician, Mohammed Ibn Musa al-Khowarizmi. Over time, pronunciation changed to *aljabra* and eventually *algebra*.

Expectation: i) determine the solution to a simple equation with one variable

4. Pablo is going to the candy store to buy some chocolate covered almonds priced at $1.00 for each 100g. Pablo has $6.00. Create and solve an equation to find how many grams he can buy.

5. Laviah and Andrew decided to have lunch together. The cafeteria menu is shown below:

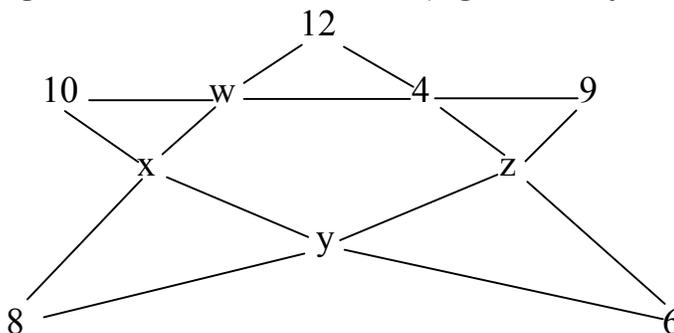| Item	Price
Chicken Burger	$2.50
Salad	$2.00
Macaroni and Cheese	$2.00
Cookies	$0.50
Juice	$0.75

Together, they have $10.50. Laviah wants a chicken burger, salad and juice. Andrew wants juice and macaroni and cheese. After buying their lunches, find out how many cookies they can buy with the remaining money.

TRY THIS!

Find the missing values.
The numbers along each line must add to 24 (e.g. $9 + z + y + 8 = 24$).

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                    12
       10 _____ w _____ 4 _____ 9
              x               z
                       y
       8                          6
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For an extra challenge, try the game *Equation Match* at
http://www.bbc.co.uk/education/mathsfile/shockwave/games/equationmatch.html

Expectation: i) determine the solution to a simple equation with one variable