

# A4

## Algebraic Notation

What expression do I have if I think of a number, double it and then add three?

**Answer:**  $2x + 3$

Say what the expression  $4x + 17$  means in words.

**Answer:** Take a number, multiply it by four and then add seventeen.

- 1) Write down the expression you will have if you think of a number (let  $x$  be the number) and then:
    - a) add three to it
    - b) double it
    - c) multiply it by three and then subtract four
    - d) multiply it by itself
    - e) divide it by two
    - f) divide it by two and then add one
    - g) add three to it and multiply the result by two
    - h) multiply it by five, add four, divide the result by two
  - 2) Say what the following expressions mean in words.
    - a)  $x + 6$
    - b)  $x - 7$
    - c)  $8x$
    - d)  $4x + 2$
    - e)  $\frac{x}{5}$
    - f)  $6(x + 7)$
    - g)  $4(3x - 1)$
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- 3) If  $s = 2v$ , work out the value of  $s$  when  $v = 7$
  - 4) If  $y = 3t + 4$ , work out the value of  $y$  when  $t = 5$
  - 5) If  $g = 2t - 1$ , work out the value of  $g$  when  $t = 9$
  - 6) If  $f = 2(t + 8)$  and  $t = 3$ , find the value of  $f$
  - 7) If  $d = 3(2e - 3)$  and  $e = 5$ , find the value of  $d$
  - 8) If  $c = 4$  and  $d = 3$ , find the value of:
    - a)  $2c$
    - b)  $2c - d$
    - c)  $cd$
    - d)  $5c + 2d$
    - e)  $10cd$
    - f)  $2(c + d)$
    - g)  $5(3c - 2d)$

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## Algebraic Notation

The body mass index (BMI) is a measure used to show if an adult is at a healthy weight. It doesn't apply to children, only adults.

Here is a formula for calculating BMI

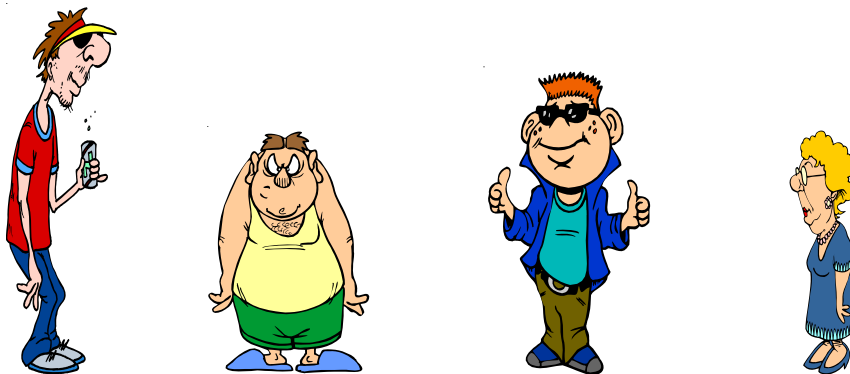
$$\text{BMI} = (\text{weight in kg}) \div (\text{height in m}) \div (\text{height in m})$$

A person with BMI between 18.5 and 25 is at a healthy weight.

A person with BMI less than 18.5 is underweight.

A person with BMI between 25 and 30 is overweight.

A person with BMI over 30 is obese.



Here are the heights and weights of the four people above. They are in no particular order.

<b>Height (m)</b>	1.74	1.82	1.62	1.62
<b>Weight (kg)</b>	70	57	55	74
<b>BMI</b>				

- Work out the BMI for each height and weight and put them in the table. Give your answers to the nearest whole number.
- Match each height, weight and BMI with the correct person.
- For each person, decide whether he/she is underweight, healthy, overweight or obese - write the answer next to each person.
- A woman is 1.65 m tall and weighs 45.6 kg. She worries that she is overweight. Is she right?