

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

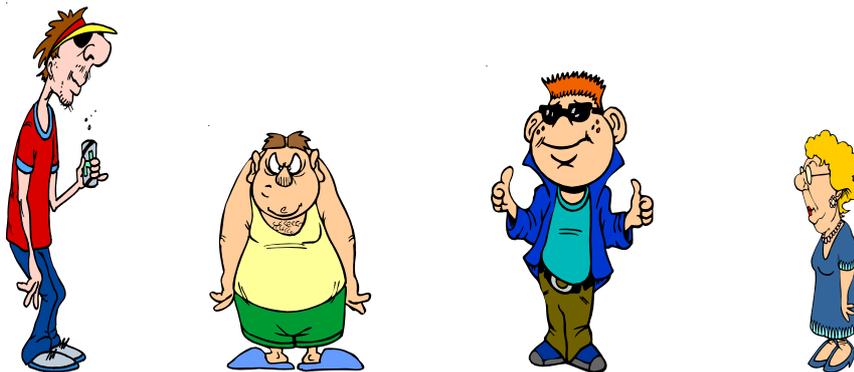
$$\text{BMI} = (\text{weight in kg}) \div (\text{height in m}) \div (\text{height in m})$$

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.

Height (m)	1.74	1.82	1.62	1.62
Weight (kg)	70	57	55	74
BMI				

- 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?