

Substituting into Formulae

Starter

1. **(Review of last lesson)** Given that $v = u + at$, find v when $u = 30$, $a = -9.8$ and $t = 2$.
2. **(Review of last lesson)** Given that $T = 2\pi\sqrt{\frac{l}{10}}$, find T when $l = 16$ m.

Notes

Substitution into real-life formulae follows the same method as the previous lesson. Try to enter the whole calculation into your calculator, using **brackets for negative numbers**.

E.g. 1 Given that the volume of a cone is $\frac{\pi r^2 h}{3}$, find the volume when $r = 6$ and $h = 4$. Give your answer to 1 d.p..

Working: Volume of cone = $\frac{\pi r^2 h}{3} = \frac{\pi \times 6^2 \times 4}{3} = 150.8$

E.g. 2 Celsius and Fahrenheit are connected by the formulae, $C = \frac{5}{9}(F - 32)$. Find the temperature in Celsius when the temperature is 156°F . Give your answer to 3 s.f..

E.g. 3* Let $y = 4x + 3$ and $x = 6 - 7t$. Express y in terms of t .

Video: [Substituting into formulae](#)

[Solutions to Starter and E.g.s](#)

Exercise

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|----------------------|------------------|
| 9-1 class textbook: | p98 M4.2 Qu 1-12 |
| A*-G class textbook: | p90 M4.2 Qu 1-12 |
| 9-1 homework book: | p33 M4.2 Qu 1-8 |
| A*-G homework book: | p25 M4.2 Qu 1-8 |

Summary

Substitution into real-life formulae follows the same method as the previous lesson. Try to enter the whole calculation into your calculator, using **brackets for negative numbers**.