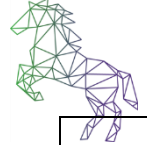# Year 7 Maths Homework Menu: HT5

For each unit you must choose one take away item for homework. The chilli rating suggests the difficulty of the task, or the challenge it might offer.

Choose your homework from the menu below. The extra hot tasks will gain the most bonus points. You can earn an extra bonus point for putting in maximum effort.

Your teacher will set your deadline and how you should submit your work.

				Substitution	**Simplification**	**Expanding**
More advanced thinking skills	REASONING	Creating	6	Anna is 5 and Sam is 10 years old. Which formula best represents their ages? Explain your answer a) A = S + 5 b) S = A + 5 c) A = 2S d) S = 2A	The number x is an integer. a) Write in algebraic terms, the next two integers greater than x. b) Write an expression for the total, T when you add x to the next two integers. c) PROVE that T is always a multiple of 3.	Research what it means to factorise expressions and how it might relate to moving forward in this topic.
	REASONING	Evaluating	5	For three of your other school subjects (not mathematics!) identify a formula you will use in each subject before you are 16 years old	The following trick always gives the answer 1. Explain why. **B.** Write down any number. Double it. Add 4. Subtract your original number. Subtract 3. Subtract your original number.	The following trick always gives the answer 8. Explain why. **a.** Write down any number. Add 3. Double it. Subtract your original number. Add 2. Subtract your original number.
	PROBLEM SOLVING	Analysing	4	The volume (V) of a cuboid is given by the formula V = abc. The surface area (S) of the cuboid is given by $S = 2ab + 2bc + 2ac.$ Find the volume and surface are of the cuboid when a = 3cm, b = 4cm and c = 5cm	Write an expression for the perimeter of this shape $3x + 6$ $3y + 4$ $5y - 2$ $4x - 1$	Mary and Dan both earned the same hourly wage. Mary's boss increased her hourly wage by £4 one year, then doubled it the following year. Dan's boss doubled his wage one year, then increased it by £6 the following year. Who is earning more now? Explain how you know.

	Thinking skills	PROBLEM SOLVING	Applying	3	The amount of medicine, s ml, to give to a child can be worked out using the formula; $$S = \frac{am}{150}$$ s is the amount of medicine, in ml. a is the adult dose, in ml. m is the age of the child, in months. A child is 20 months old. An adult's dose is 45ml. Work out the amount of medicine the child should be given.	1) A pencil costs 20 pence. What is the cost of buying m pencils? 2) A book of six identical stamps costs y pence. What is the cost of one stamp?	Fill in the blank expressions to complete the identities. $7(p-3) - 4(\boxed{}) = 3p - 1$ $3(5p + 9) - 4(\boxed{}) = 3p - 1$ $8(3p + 1) - 3(\boxed{}) = 3p - 1$
		FLUENCY	Understanding	2	The formula for the area of a rectangle is A = bh Find: 1) A when b = 4 and h = 6 2) h when A = 40 and b = 4 3) b when A = 26 and h = 4	Complete Mymaths task 1178	Expand and simplify: 1) 3(4t + 1) + 5(t − 4) 2) 4(5m − 1) − 3(2m + 2) 3) 6(p − 1) − 2(3 − 5p)
		FLUENCY	Remembering	1	When a = 5 , b = 4 and c = -3 what is: 1) 8a 2) 10 − b 3) ac 4) b − c	Complete Mymaths task 1179	Expand: 1) 4(t + 3) 2) 5(2m − 7) 3) p(2p + 3) 4) 3b(2b − a)