Question 3

(a)
$$L = 3w + 5$$
$$= 3 \times 0.4 + 5$$
$$= 3 \times 40 + 5 \checkmark$$
$$= 125 \checkmark$$

$\frac{2}{3}$

Best to do the conversion of metres to centimetres first, as the given formula works for a length in centimetres. So one way to set out your answer is:

0.4m = 0.4 × 100cm = 40cm. Substituting w = 40 into L = 3w + 5 gives

$$L = 3 \times 40 + 5 = 125.$$

So, the required length is 125cm (or 1.25m).

(b)
$$-2 \left((-1)^2 - 4 \times -2 \right)$$
$$= -2 (1 + 8) \checkmark$$
$$= -2 \times 9 \checkmark$$
$$= -18. \checkmark \quad \text{Good}$$

$\frac{2}{2}$

Please include brackets here. Writing $(-1)^2$ means that this can't be confused with $-1^2 = -1$. This is especially important when working with your calculator.

(c)
$$-3n - 4 \checkmark$$

$\frac{2}{2}$

Correct, but I suggest you start your answer with the expression given in the question. This will make it more meaningful if you review your TMA later. (Same for part (b)).

(d) (i)
$$a^2 - 2ba + ab + 2b^2$$
$$= a^2 - 2ab + ab + 2b^2 \checkmark$$
$$= a^2 - ab + 2b^2 \checkmark \quad \text{Good}$$

$\frac{2}{2}$

(ii)   minus

$\frac{1/2}{1}$

Remember that $-ab$ is mathematical shorthand for $-1ab = -1 \times ab$. So the coefficient is -1. (see Unit 5, Activity 10 for examples)

(e) (i)   95p × bananas

unit (pence) so omit from formula.

$$c = 95n \checkmark$$

$\frac{1/2}{2}$

Remember to define your variables:
Let n = number of kg of bananas, c = cost in pence.

(ii) Total cost is c = 95n + 7 in pence

In pounds total cost is $\dfrac{95n + 7}{100}$ $\checkmark$

So $\overset{T}{c} = \dfrac{95n + 7}{100}$ where T is the total cost in £.

$\frac{2}{3}$

new variable

$\boxed{\frac{11}{15}}$

Total score : $^{11}/_{15}$

Well done! You have shown a good understanding of the algebra in Unit 5 and you will find these skills useful later in the course. I've two suggestions which I hope will help for your next TMA:

- Do have a quick look back over similar activities and their solutions in the unit. This may help you to spot important details such as the meaning of coefficient in part (d).

- You have made good progress in setting out your solutions clearly. Remember to include a concluding sentence to answer the question asked. For example in (a) your answer should end 'So the length of material is ....' rather than just a number.

Our next online tutorial is on Thursday 25th at 7pm, but if there is anything on this assignment or the course that you would like to discuss before then, please let me know.

Best wishes,

Your tutor.