

Formulae Answers



- 1) a) Correct formula:
number of bags \times 45 = cost
- b) $45 \times \text{cost} = \text{number of bags}$
This formula is showing (incorrectly) how to calculate the number of bags, not the cost.
- cost = number of bags + 45
The addition symbol has been used instead of the multiplication symbol.
- 2) a) number of boxes \times 75 = total number of paperclips
- b) $20 \times 75 = 1500$ paperclips
- 3) a) $480 \div \text{number of children} = \text{cost per child in } \pounds$
- b) $480 \div 120 = 4$
The cost per child will be $\pounds 4$.
- 4) a) length multiplied by width = area of rectangle
(Children may use other vocabulary to describe length and width.)
- b) $lw = a$
(Many children will use the first letters of the dimension names to represent the variables, as this is usual for shape formulae but any letter is acceptable.)
- c) twice the length added to twice the width = perimeter of a rectangle
(Accept other correct variations.)
- d) $2l + 2w = p$ or $2(l+w) = p$



- 1) a) Katie's formula is correct.
- b) Jonah's formula is incorrect as he has linked the call-out fee to the number of hours, whereas it should be a stand-alone cost.
- 2) 2 hours and 5 minutes = 125 minutes
125 minutes total cooking time $-$ 35 minutes = 90 minutes
 $90 \text{ minutes} \div 6 = 15$
 $15 \times 100\text{g} = 1500\text{g} = 1.5\text{kg}$
The pie contained 1.5kg of filling - which is more than 1.4kg.
- 3) a) The distance of the horse and cart ride can be calculated using a perimeter formula:
 $2l + 2w = \text{perimeter}$
 $(2 \times 12.5) + (2 \times 7) = 25 + 14 = 39$
The total distance is 39km.
- b) This information can then be substituted into the formula:
 $(\text{number of km} \times 1.50) + 10 = \text{cost in } \pounds$
 $(39 \times 1.50) + 10 = \pounds 68.50$
The cost of the journey is $\pounds 68.50$ - which is more than $\pounds 60$.



1) a) Price of 15 cupcakes:
 $(15 \times 30) + (3 \times 50) = 450 + 150 = 600 = \text{£}6$

Price of ten cupcakes:
 $(10 \times 30) + (2 \times 50) = 300 + 100 = 400\text{p} = \text{£}4$

It costs £2 more to buy 15 cupcakes than to buy ten cupcakes.

b) Nishi can buy one gift box with six cupcakes, costing £2.30. She will have 70p change.

2) Cost of installing artificial grass:
 $27 \times 9.99 = \text{£}269.73$
 $3.5 \times 75 = \text{£}262.50$
 $\text{£}269.73 + 262.50 = \text{£}532.23$

Cost of installing rubber matting:
 $27 \times 14.99 = \text{£}404.73$
 $1.5 \times 75 = \text{£}112.50$
 $\text{£}404.73 + \text{£}112.50 = \text{£}517.23$

The difference in cost between installing the two surfaces is £15.