

a) Natalie makes potato cakes in a restaurant.
She mixes potato, cheese and onion so that

$$\text{weight of potato} : \text{weight of cheese} : \text{weight of onion} = 9 : 2 : 1$$

Natalie needs to make 6000g of potato cakes.
Cheese costs £2.25 for 175g.

Work out the cost of the cheese needed to make 6000g of potato cakes.

How much of each ingredient will Natalie use?	$9 + 2 + 1 = 12$ $6000\text{g} \div 12 = 500\text{g}$ $9 \times 500\text{g} = 4500\text{g}$ of potato $2 \times 500\text{g} = 1000\text{g}$ of cheese $1 \times 500\text{g} = 500\text{g}$ of onion
How many packs of cheese will Natalie buy?	$1000\text{g} \div 175\text{g} = 5.714285$ Natalie will need 6 packs of cheese.
How much will the cheese cost?	$6 \times £2.25 = £13.50$

b) Natalie makes biscuits in a bakery.
She mixes butter, sugar and flour so that

$$\text{weight of butter} : \text{weight of sugar} : \text{weight of flour} = 5 : 12 : 15$$

Natalie needs to make 4800g of biscuits.
Sugar costs £0.75 for 500g.

Work out the cost of the sugar needed to make 4800g of biscuits.

How much of each ingredient will Natalie use?	$5 + 12 + 15 = 32$ $4800\text{g} \div 32 = 150\text{g}$ $5 \times 150\text{g} = 750\text{g}$ of butter $12 \times 150\text{g} = 1800\text{g}$ of sugar $15 \times 150\text{g} = 2250\text{g}$ of flour
How many packs of sugar will Natalie buy?	$1800\text{g} \div 500\text{g} = 3.6$ Natalie will need 4 packs of sugar.
How much will the sugar cost?	

c) Natalie makes biscuits in a restaurant.
She mixes butter, sugar and flour so that

$$\text{weight of butter} : \text{weight of sugar} : \text{weight of flour} = 6 : 7 : 9$$

Natalie needs to make 5500g of biscuits.
Butter costs £1.09 for 450g.

Work out the cost of the butter needed to make 5500g of biscuits.

How much of each ingredient will Natalie use?	$6 + 7 + 9 = 22$ $5500\text{g} \div 22 = 250\text{g}$ $6 \times 250\text{g} = 1500\text{g of butter}$ $7 \times 250\text{g} = 1750\text{g of sugar}$ $9 \times 250\text{g} = 2250\text{g of flour}$
How many packs of butter will Natalie buy?	
How much will the butter cost?	

d) Natalie makes concrete on a building site.
She mixes cement, sand and aggregate so that

$$\text{weight of cement} : \text{weight of sand} : \text{weight of aggregate} = 2 : 3 : 6$$

Natalie needs to make 2750kg of concrete.
Cement costs £6.60 for 30kg.

Work out the cost of the cement needed to make 2750kg of concrete.