# Forming and Interpreting Equations

### Section A: Form equations to represent the following situations

1. I buy *g* cakes and then I buy another *k*, so that I have cakes in total.
2. I buy *f* cakes and then I eat *d* of them, which leaves me with cakes.
3. My mother buys *w* cakes and I buy twice as many as she does. In total, we have cakes
4. I buy *x* packets each containing *y* cakes. In total, I have cakes.
5. I buy *e* boxes each containing *f* fruit cakes, and also *h* packets each containing 3 jam-sponge cakes. In total, this leaves me with cakes.
6. I buy *p* boxes, and each packet contains *c* chocolate cakes as well as *g* ginger cakes, to give me a total of cakes.
7. I buy *d* boxes each containing 5 cakes, and then I eat *w* of them, leaving me with cakes.
8. My uncle shares *k* cakes fairly between my two brothers and me. We each get cakes.
9. My uncle buys *t* packets each containing *w* cakes, and shares all the cakes fairly between my four sisters and me. We each get cakes.
10. My uncle buys *h* packets each containing *g* cakes; he eats *b* of the cakes and then shares the remaining cakes fairly between me, my *x* brothers and my 2 sisters. Each of us gets cakes.
11. Daniel goes to the cinema with pounds. He buys a ticket for pounds and receives pounds change.
12. Peter is feeling generous and brings in *s* sweets to give to the other *b* members of the class. Each member of the class receives exactly *n* sweets
13. Ella and Zoe are playing Mariokart. Ella takes *y* seconds to complete the course and Zoe takes *x* seconds. Ella beats Zoe by m seconds.

### Section B: Cost, weight, number.

1. Lucie buys 5 ice creams and 8 cupcakes. Each ice cream costs £ and each cupcake costs £. In total, she spends £20
2. Theo eats hamburgers and chips. The hamburgers weigh 200g each and the chips weigh 5g each. In total, he eats 850g of food.
3. A factory buys screws for pence and bolts for pence. 5 screws cost the same as 12 bolts.
4. Matthew buys cakes and biscuits. Each cake costs 40 pence and each biscuit costs 15 pence. He spends the same on cakes as biscuits.
5. Karen buys steaks, which each weigh grams and chicken legs, which each weigh grams. In total, the meat weighs grams.
6. I buy pizzas and kebabs for a party. Each pizza costs francs and each kebab costs francs. In total, I spend francs on food.
7. In the morning, boys spends minutes in the bathroom, each of the girls spends twice as long as each of the boys. In total, there are q minutes spent in the bathroom.
8. Oliver buys 20 marshmallows costing *m* pence each and Rajiv buys 32 chocolate mice costing *c* pence each. Oliver spends more on sweets than Rajiv.
9. A melting snowman shrinks by k cm every hour. He is currently h cm tall. In  hours time, he will be p cm tall.
10. Dylan has boxes of strawberries. Each box contains strawberries. He shares his strawberries equally between friends. Each friend gets strawberries.
11. I have m hairs on my head but am losing them at a rate of hairs per day. After days I will give pence to charity for every hair on my head. I will donate pence in total.
12. My uncle buys packets each containing cakes; he eats of the cakes and then shares the remaining cakes fairly between me, my brothers and my sisters. We each receive cakes.

### Section C: Answer each of these questions with a sentence in English.

1. I buy cakes, then I buy more cakes. What does mean?
2. I buy *f* cakes and then I eat *d* of them. What does mean?
3. I buy *x* packets each containing *y* cakes. What does mean?
4. I buy *d* boxes each containing 5 cakes, and then I eat *w* of them. What does mean?
5. Jake goes to the cinema with pounds. He buys a ticket for pounds. What does mean?

6. Let *r* be the cost of a banana in pence.

Let *s* be the cost of a tomato in pence.

a) What does  mean?

b) What does  mean?

7. Let *p* be the number of books James buys.

Let *q* be the number of magazines James buys.

a) What does  mean?

b) Give two interpretations of

8. Let *g* be the weight of an apple in grams.

Let *h* be the weight of a pineapple in grams.

a) What does  mean?

b) What does  mean?

9. Let *a* be the cost of a pear in pence.

Let *b* be the cost of a plum in pence.

a) What does  mean?

b) What does  mean?

10. Let *a* be the number of boxes of cakes that Kate buys.

Let *b* be the number of cakes in each box.

a) What does mean?

b) What does mean?

c) Give two interpretations of

11. Let *w* be the cost of a taxi journey in pounds.

Let *x* be the length of the journey in miles.

a) What does  mean?

b) What does  mean?

12. Let *a* be the width of a rectangle, in cm.

Let *b* be the length of a rectangle, in cm.

a) What does  mean?

# b) What does mean?

13. Let *x* be the number of goals Man City have scored.

Let *y* be the number of goals Chelsea have scored.

Let *z* be the number of goals Tottenham have scored.

a) What does  mean?

b) What does  mean?

c) What does  mean?

d) What does  mean?

### Section D: Even trickier situations.

1. I had seven bottles of fizzy orange, each containing *x* ml. Having had six 80ml glasses of fizzy orange, I now have three bottles left.
2. Bruno has *y* marbles and in a lucky game manages to double the size of his collection. He then buys 12 more and ends up with five times as many as he had to start with.
3. A man is 32 years older than his son, who is x years old. Ten years ago he was three times as old as his son was then.
4. The length of a rectangle, called x is 4 cm more than its width. The rectangle’s area is 12 cm2.
5. Christian has  sweets. His friend Alex used to have two more sweets than Christian but after winning 12 more in a game, he finds that he has doubled the number of sweets he has.
6. Write a statement which is difficult, but possible, to turn into an equation.

# Forming and Interpreting Equations – Homework

1. Maddie had y sweets. She then gave b sweets to her brother. She was left with k sweets.
2. Eleanor heads off to the shopping centre with £k in her pocket. She buys a dress for £*p* and some shoes for £*q*. Walking home she counts up her money and finds she has £k left.
3. Elliot brings in *j* jelly babies and *b* black jacks. He shares these sweets out evenly between *x* people so that each gets a total of *s* sweets.
4. Benji buys x packets of biscuits, each containing z biscuits. After eating p biscuits he only has m biscuits left.
5. I have my coloured marble collection stored in boxes, each containing q marbles, each containing the same number of marbles. Last week I had 6 boxes of marbles. Having received a gift of twenty seven particularly attractive specimens, I now have enough for nine boxes.
6. In 8 years’ time, George will be 3 times his current age, which is x.
7. Let *c* be the cost of a carrot, and let *m* be the cost of a microwave meal both measured in pence. What does  mean?
8. Hugo goes shopping and buys 15 sweets costing *s* pence each and an Easter egg costing *£e*. When he gets to the till he gets change from a £5 note. (think carefully about which symbol to use)