Q1.

◻ and ◯ each stand for a different number.

$$◻ = 34$$

$$◻ + ◻ = ◯ + ◯ + ◻$$

What is the value of ◯ ?

1 mark

Q2.

A theme park sells tickets online.

Each ticket costs £24

There is a £3 charge for buying tickets.

Which of these shows how to calculate the total cost, in pounds?

Tick **one**.

number of tickets × 3 + 24 ☐

number of tickets × 24 + 3 ☐

number of tickets + 3 × 24 ☐

number of tickets + 24 × 3 ☐

1 mark

Q3.

Here is a rule for the time it takes to cook a chicken.

> **Cooking time = 20 minutes plus an extra**
>
> **40 minutes for each kilogram**

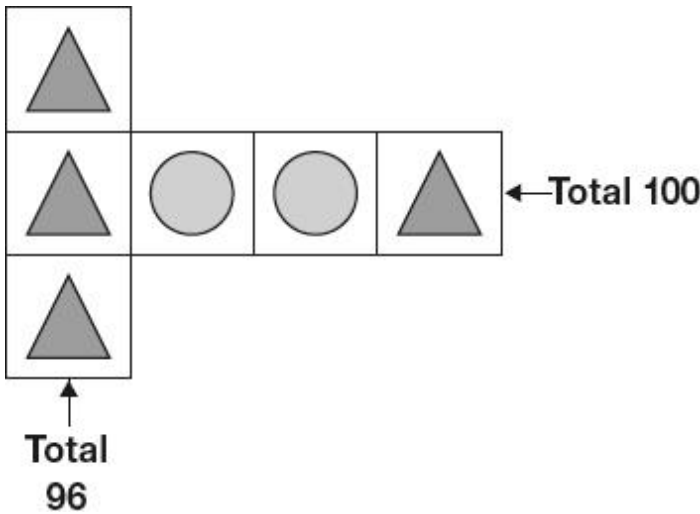How many minutes will it take to cook a 3 kg chicken?

minutes

What is the mass of a chicken that takes 100 minutes to cook?

kg

Q4.

Each shape stands for a number.

←Total 100

Total
96

Work out the **value** of each shape.

△ = _____
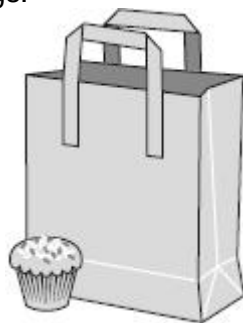
◯ = _____

Q5.

Maria bakes cakes and sells them in bags.

She uses this formula to work out how much to charge for one bag of cakes.

Cost = number of cakes × 20p + 15p for the bag

How much will a bag of 12 cakes cost?

£

Olivia buys a bag of cakes for £5.15

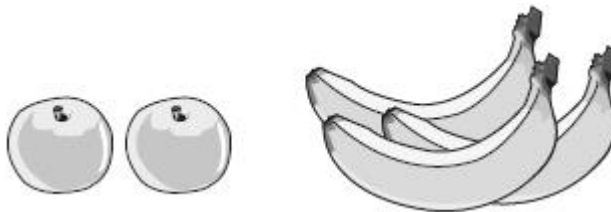Use the formula to calculate how many cakes are in the bag.

Show your method
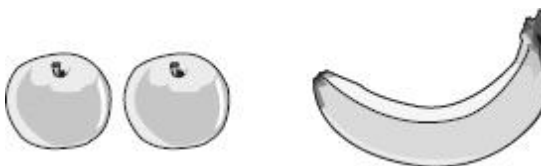
Q6.

A shop sells fruit.

Chen buys 2 apples and 3 bananas.
He pays £2.35

Megan buys 2 apples and 1 banana.
She pays £1.25

How much does **one** banana cost?

Show your method

£

2 marks

Q7.

What is the value of $4x + 7$ when $x = 5$?

1 mark

Q8.

n stands for a number.

$n + 7 = 13$

What is the value of $n + 10$?

Q9.

Each shape stands for a number.

← Total = 27

← Total = 30

Total = 45

Work out the **value** of each shape.

△ =

◯ =

☆ =

Q10.

a and b each represent a whole number between 1 and 10

$$2a + b = 8$$

Write the three possible combinations of a and b
One is done for you.

when $a =$ [1] $b =$ [6]

when $a =$ [ ] $b =$ [ ]

when $a =$ [ ] $b =$ [ ]

2 marks

Mark schemes

Q1.

17

[1]

Q2.

Second box only ticked correctly, as shown:

number of tickets × 3 + 24	
number of tickets × 24 + 3	✓
number of tickets + 3 × 24	
number of tickets + 24 × 3	

Accept alternative unambiguous positive indication of the correct answer, e.g. Y.

[1]

Q3.

(a)　140

The answer is a time interval

1

(b)　2

1

[2]

Q4.

(a)　△ = 32

1

(b)　◯ = 18

*If the answers to ◯ and △ are incorrect, award **ONE** mark if*
△ + ◯ = 50 unless ◯ = 25

1

[2]

Q5.

(a)   £2.55

1

(b)   Award **TWO** marks for the correct answer of 25

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- £5.15 − 15p = £5
  £5 ÷ 20p

OR

- £5.15 − 15p = £5
  5 × 5

*Answer need not be obtained for the award of **ONE** mark.*

Commentary: The 2014 national curriculum specifies that pupils should use simple formulae (6A2).

Up to 2

[3]

Q6.

Award **TWO** marks for the correct answer of 55p **OR** £0.55

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

- ■   £2.35 – £1.25 = £1.10

£1.10 ÷ 2 = wrong answer

*Accept for **ONE** mark £55 **OR** £55p **OR** 0.55p as evidence of appropriate working.*
*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2
U1

[2]

Q7.

27

[1]

Q8.

16

[1]

Q9.

Award **ONE** mark for three correct numbers, as shown.

△ = 15

◯ = 6

☆ = 9

[1]

Q10.

Award **TWO** marks for both correct combinations, as shown.

when a = 2 b = 4

when a = 3 b = 2

OR

when a = 3 b = 2

when a = 2 b = 4

Award **ONE** mark for either combination correct, i.e.

when a = 2 b = 4

OR

when a = 3 b = 2

[2]