Edexcel GCSE

Mathematics

Foundation/Higher Tier

Number: Proportion

Information for students

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 17 questions in this selection.

Advice for students

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

Information for teachers

The questions in this document are taken from the 2009 GCSE Exam Wizard and include questions from examinations set between January 2003 and June 2009 from specifications 1387, 1388, 2540, 2544, 1380 and 2381.

Questions are those tagged as assessing "Proportion" though they might assess other areas of the specification as well. Questions are those tagged as "Foundation/Higher" so could have (though not necessarily) appeared on either a Foundation, Intermediate or Higher tier paper.

GCSE Mathematics

Formulae: Foundation Tier

You must not write on this formulae page.

Anything you write on this formulae page will gain NO credit.

Area of trapezium $= (a + b)h$
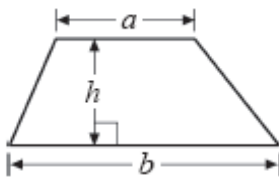
Volume of prism = area of cross section × length
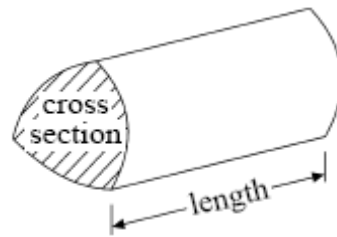
1. Brass is made up of copper and zinc.
Every 100 grams of brass contains 20 grams of zinc.

(a) Work out the weight of zinc in 60 grams of brass.

.... g

(2)

Brass contains 4 parts by weight of copper to 1 part by weight of zinc.

(b) Work out the weight of copper in 350 grams of brass.

.... g

(2)
(Total 4 marks)

2. Amy bought 17 footballs for a total cost of £50.83.

James bought 11 footballs.

The cost of each football bought by Amy and James was the same.

Work out how much James paid for his 11 footballs.

£ ....

(Total 2 marks)

3.   Michael buys 3 files

The total cost of these 3 files is £5.40
Work out the total cost of 7 of these files.
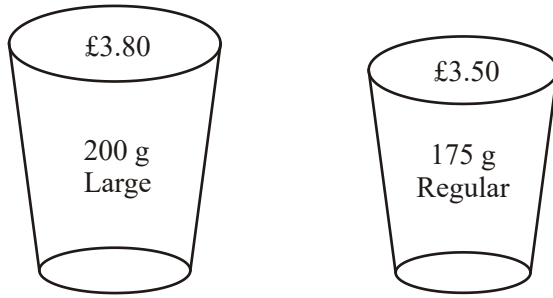
£…………………….
(Total 3 marks)

4.   Bob lays 200 bricks in 1 hour.
He always works at the same speed.

Work out how long it will take Bob to lay 960 bricks.
Give your answer in hours and minutes.

………………hours.………………minutes
(Total 3 marks)

5.

A Large tub of popcorn costs £3.80 and holds 200 g.
A Regular tub of popcorn costs £3.50 and holds 175 g.

Rob says that the 200 g Large tub is the better value for money.
Linda says that the 175 g Regular tub is the better value for money.

Who is correct?

………………………

Explain the reasons for your answer. You must show all your working.

(Total 2 marks)

6. Barry buys 25 identical pens for £3.25

Work out the cost of 35 of these pens.

£………………………
(Total 2 marks)

7.   Here is a list of ingredients for making fudge for **6** people.

> **Fudge**
>
> Ingredients for **6** people
> >   600 g of sugar
> >   12 g   of butter
> >   480 g of condensed Milk
> >   90 ml of milk

Work out how much of each ingredient is needed to make fudge for **9** people.

.... g of sugar

.... g of butter

.... g of condensed milk

.... ml of milk

(Total 3 marks)

8.   Here is a list of the ingredients needed to make scones for **4** people.

> **Scones**
>
> Ingredients for **4** people
>
> 200 g   of flour
>   2   eggs
>   50 g   of currants
> 100 m*l* of milk

Work out how much of each ingredient is needed to make scones for **6** people.

.... g of flour

.... eggs

.... g of currants

.... m*l* of milk

(Total 3 marks)

9.   The cost of 1.5 kg of peaches is £0.84

The total cost of 3 kg of peaches and 2 kg of apples is £2.34

Work out the cost of 1 kg of apples.

………………...

(Total 3 marks)

10.   Here are the ingredients needed to make 8 pancakes.

<div align="center">

Pancakes

Ingredients to make **8** pancakes

300 m*l* milk
1 egg
120 g flour
5 g butter

</div>

Jacob makes 24 pancakes.

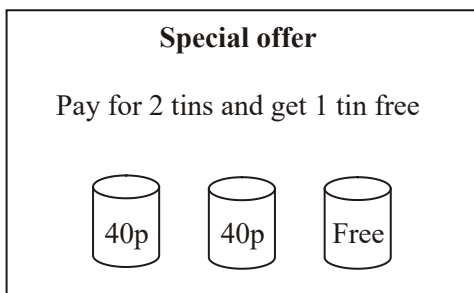(a)   Work out how much milk he needs.

.... m*l*

(2)

Cathie makes 12 pancakes.

(b)   Work out how much flour she needs.

.... g

(2)
(Total 4 marks)

11. A tin of cat food costs 40p.
A shop has a special offer on the cat food.

> **Special offer**
>
> Pay for 2 tins and get 1 tin free
>
> 40p   40p   Free

Julie wants 12 tins of cat food.

(a) Work out how much she pays.

£ ....

(3)

9 of the 12 tins are tuna.

(b) Write 9 out of 12 as a percentage.

.... %

(2)

The normal price of a cat basket is £20
In a sale, the price of the cat basket is reduced by 15%.

(c)   Work out the sale price of the cat basket.

£ ....
                                                                    (3)
                                                        (Total 8 marks)

12.   Here are the ingredients for making cheese pie for 6 people.

Cheese pie for **6** people

180 g flour

240 g cheese

80 g butter

4 eggs

160 m*l* milk

Bill makes a cheese pie for 3 people.

(a)   Work out how much flour he needs.

.... g
                                                                    (2)

Jenny makes a cheese pie for 15 people.

(b)   Work out how much milk she needs.

.... m*l*

(2)
(Total 4 marks)

13.   A tin of cat food costs 40p.
A shop has a special offer on the cat food.

Special offer

Pay for 2 tins and get 1 tin free

| 40p | 40p | Free |

Julie wants 12 tins of cat food.

(a)   Work out how much she pays.

£ ....

(3)

The normal price of a cat basket is £20
In a sale, the price of the cat basket is reduced by 15%.

(b)　　Work out the sale price of the cat basket.

£ ....

(3)
(Total 6 marks)

14.　　Ruth makes poached peaches.

Here is a list of ingredients for making poached peaches for 6 people.

Poached Peaches
Ingredients for 6 people
12　　　　yellow cling peaches 1400 ml　　water 130 g　　granulated sugar

Ruth makes poached peaches for 9 people.

Work out the amount of each ingredient needed to make poached peaches for 9 people.

....   yellow cling peaches

........................ml   water

........................g   granulated sugar

(Total 2 marks)

15.   Here is a list of ingredients needed to make 8 pancakes.

<div align="center">

8 pancakes

120 g of plain flour
1 egg
300 m*l* of milk
1 tablespoon of oil

</div>

Work out how much plain flour is needed to make 10 pancakes.

<div align="right">

.... g
(Total 2 marks)

</div>

16.   Mrs Moger took a group of children to the theatre.

Adult Ticket   £13.20

Child Ticket   £8.30

The total cost of **one** adult ticket and **all** the child tickets was £146

Work out the number of children Mrs Moger took to the theatre.

.... children
(Total 3 marks)

17.   Here is a list of ingredients for making **8** cheese scones.

Ingredients for 8 cheese scones
200 g self-raising flour
60 g butter
30 g cheese
150 m*l* milk

Work out the amount of each ingredient needed to make **12** cheese scones.

.... g self-raising flour

.... g butter

.... g cheese

.... m*l* milk

(Total 3 marks)

CM16;CM18;question Char Char Char Char Char Char Char Char Char Char Char Char Char Char
        Char Char Char Char Char Char Char Char Char;question Char Char Char Char;question
        Char Char Char Char Char Char;question Char Char Char Char Char Char Char Char
        Char Char Char Char;Bottom;BoxL;BoxR;

01.   (a)   12   2

$20 \times 3 \div 5$ oe

> *M1 for 20 × 3 ÷ 5 oe*
> *A1 cao*

   (b)   280   2

$350 \div 5$ or 70

> *M1 for 350 ÷ 5 or 70 seen*
> *A1 cao*

[4]

02.   £32.89   2

£50.83 ÷ 17 = £2.99
£2.99 × 11

> *M1 for £50.83 ÷ 17 (implied by £2.99)*
> *A1 cao*

[2]

03.   12.60   3

5.40 ÷ 3 × 7

> *M1 for 5.40 ÷ 3 or sight of 1.8*
> *M1 dep for "1.80" × 7*
> *A1 for 12.6 or equivalent*

[3]

04.   960 bricks in $\dfrac{960}{200}$

= 4.8 hours
4h 48min   3

> *M1 for $\dfrac{960}{200}$ or any valid partitioning method leading to 900*
>
> *A1 for 4.8 seen*
> *A1 for 4 hours 48 mins cao*
> *(SC B2 for 4 hours 8 minutes or 4 hours 80 mins*
> *or B1 for 4 hours< answer < 5 hours)*

[3]

05.   380 ÷ 200 = 1.9
350 ÷ 175 = 2
Rob, less pence per gram   2

> *M1 for 380 ÷ 200 (= 1.9) and 350 ÷ 175 (= 2) oe*
> *or 200 ÷ 380 (= 0.526) and 175 ÷ 350 (= 0.5) oe*
> *or valid complete method for comparing the two tubs*
> *A1 for Rob with correct calculations*

[2]

06. 3.25 ÷ 25 × 35
4.55   2

M1 for 3.25 ÷ 25 × 35
A1 for 4.55 cao

[2]

07. 900
18
720
135   3

B3 all correct
(B2 for 2 or 3 correct)
(B1 for 1 correct).

[3]

08. 300
3
75
150   3

B3 for 4 correct answers
(B2 for 2 or 3 correct answers)
(B1 for 1 correct answer)

[3]

09. 3kg peaches is £1.68
£2.34 – £1.68 = £0.66
£0.66 ÷ 2 = £0.33

= £0.33 or 33p   3

M1 2 × £0.84 or digits 168 seen
M1(dep) digits 234 – digits "168" or digits 66 seen
A1 £0.33 or 33p (units consistent with answer)
NB: 0.33 or 33 without units M2, £0.33p, £33p M2A1

[3]

10. (a) $\dfrac{24}{8} \times 300 = 900$ 2

  M1 for $\dfrac{24}{8}$ oe or $\dfrac{300}{8}$ oe or 300 + 300 + 300 or 37.5 seen
  A1 for 900
  (SC: B1 for sight of two of 3, 360 or 15)

 (b) $\dfrac{12}{8} \times 120 = 180$ 2

  M1 for use of $\dfrac{12}{8}$ or 1.5 oe, eg 120 + '$\dfrac{120}{2}$ '
  or '120 ÷ 8' × 12
  A1 for 180
  (SC: B1 for sight of two of 450, 1.5 or 7.5)

  [4]

11. (a) 12 ÷ 3 × 2 (=8)
  8 × 40
  Alternative:
  3 tins = 40 × 2 = 80
  12 tins = 80 × 4
  3.20 3

  M2 for 40 × 12 ÷ 3 × 2 or better (inc. adding 8 lots of 40p)
  (M1 for using 2 of the 3 operations or 8 seen)
  A1 cao
  OR
  M1 for 3 tins = 40 × 2 (=80)
  M1 for "80" × 4
  A1 cao
  [SC: if M0 scored: B2 for digits 32, or B1 for 480 or 4.80]

 (b) $\dfrac{9}{12} \times 100$
  75 2

  M1 for $\dfrac{9}{12}$ oe
  A1 cao

(c) $\dfrac{15}{100} \times 20 = 3$

OR   10% = 20 ÷ 10 = 2

          5% = 2 ÷ 2 = 1

          15% = 2 + 1 = 3

20 – 3

Alternative:

20 × 0.85

17   3

M1 for $\dfrac{15}{100} \times 20$ oe or a correct method to work out 10% and

5% of 20, or 2 and 1 seen

A1 for 3 cao

A1 ft for 20 – "3" dependent on M1 scored

Alternative:

B1 cao for 85 or 0.85 seen

M1 for $\dfrac{"100-15"}{100} \times 20$ or "1 – 0.15" × 20

A1 ft for a correct solution of $\dfrac{"100-15"}{100} \times 20$ or "1 – 0.15" ×

20 or 17 dependent on M1 scored

SC (for both alternatives) B2 for £3

[8]

12.   (a)   180 ÷ 2

          90   2

              *M1 for 180 ÷ 2 **OR** 180 ÷ 6 × 3*

              A1 cao

       (b)   160 × 2.5

          400   2

              *M1 for 160 × 2.5 **OR** 160 ÷ 6 × 15 **OR** 160 ÷ 2 × 5 oe*

              A1 cao

              SC: B1 for an answer of 399 to 405

[4]

13.   (a) $12 \div 3 \times 2 \ (= 8)$
8×40

<u>Alternative</u>
3 tins = $40 \times 2 = 80$
12 tins = 80×4

3.20   3

M2 for $40 \times 12 \div 3 \times 2$ or better (inc. adding 8 lots of 40p)
(M1 for using 2 of the 3 operations or 8 seen)
A1 cao
OR
M1 for 3 tins = 40×2
M1 (dep) for "80" $\times 4$
A1 cao
[SC: B2 for sight of digits 320 if M0 scored]
[SC: B1 for 480 or 4.80 if M0 scored]

(b) $\dfrac{15}{100} \times 20 = 3$
OR $10\% = 20 \div 10 = 2$
$5\% = 2 \div 2 = 1$
$15\% = 2 + 1 = 3$
$20 - 3$

<u>Alternative</u>
20×0.85

17   3

M1 for $\dfrac{15}{100} \times 20$ oe or a correct method to work out 10% and
5% of 20 or 2 and 1 seen
A1 for 3 cao
A1 ft for 20 – "3" dependant upon M1 scored
[SC: B2 for 3 on answer line with no working]
Alternative
B1 cao for 85 or 0.85 seen
M1 for $\dfrac{"100-15"}{100}$ or "1 – 0.15" $\times 20$
A1 ft for a correct solution of $\dfrac{"100-15"}{100}$ or "1 – 0.15" $\times 20$
OR 17 (dep on M1 scored)

[6]

14.   18
      2100
      195   2

      B2 for all 3 correct answers
      (B1 for 1 correct answer)

                                                                                    [2]

15.   150   2

      M1 for an attempt to divide 120 by 8 or for 15 seen
      (accept 2 pancakes = 30 g of flour, for example)
      or for $\dfrac{10}{8}$ *oe seen*
      A1 cao

                                                                                    [2]

16.   146 – 13.20 = 132.80
      132.80 ÷ 8.30
      16   3

      M1 for first step in a valid method eg 146 – 13.20 or sight of
      132.8(0)
      M1 for "132.80" ÷ 8.3
      A1 cao
      Alternative 1 (repeated addition)
      M1 for repeated addition of 8.30 (at least twice)
      M1 for 13.20 + repeated addition of 8.30 (at least 15 times)
      A1 cao
      Alternative 2 (repeated subtraction)
      M1 for repeated subtraction of 8.30 (at least twice)
      M1 for repeated subtraction of 8.30 (at least 15 times with
      answers shown)

                                                                                    [3]

17.   300, 90, 45, 225   3

*M2 for any one of 200 + 100 or 60 + 30 or 30 + 15 or 150 +
75 or 300 or 90 or 45 or 225 seen.
A1 cao
or
M1 for 12 ÷ 8 or 6 ÷ 4 or 3 ÷ 2 or sight of 1.5
M1 for 200 × "1.5" or 60 × "1.5" or 30 × "1.5" or
150 × "1.5"
A1 cao
or
M1 200 ÷ 8 or 25
M1 25 × 12 or 300
A1 cao
or
M1 200 ÷ 4 or 50
M1 50 × 6 or 300
A1 cao
or
M1 200 ÷ 2 or 100
M1 100 × 3 or 300
A1 cao
(In any of the above methods the M marks can be awarded for
equivalent calculations with 60, 30 or 150)*

[3]

01.   A variety of methods were used in part (a). Some candidates recognised that 20 is one fifth of
100 and found one fifth of 60 whereas others employed build up methods which sometimes
worked but often did not. '15' was a common incorrect answer – probably because the ratio
20:80 resulted in some candidates finding 20/80 of 60. In part (b) many candidates divided 350
by 5 but some then gave '70' as the final answer. A common error was to divide 350 by 4
instead of 5.

02.   A question in which full marks were usually gained and the method was usually shown. Weaker
candidates divided by 11 instead of 17.

03.   Specification A

Foundation Tier

This question was well understood by candidates at this tier. 52% gained 3 marks which was remarkable for a Grade D question on a Foundation Tier paper. Though 37.8(0) was a commonly seen incorrect answer, most candidates were able to make a successful attempt at this question and either gain full marks or part marks for finding the cost of one file.

Intermediate Tier

It was pleasing that most candidates gained full marks. Most commonly candidates divided £5.40 by 3 to find the cost of one file and then multiplied the result by 7 but some found the cost of 1 file and added it to £5.40 × 2. The answer was often given as £12.6 rather than £12.60. Incorrect answers were rare but some candidates took £5.40 to be the cost of one file and simply multiplied this by 7.

Specification B

Many candidates scored well here, showing clear working and accurate computation. A small number worked in pence, but usually converted accurately to pounds for their answer. A common incorrect answer was £37.80 (£5.40 × 7).

04.   Specification A

Foundation Tier

Candidates understood what they had to do in this question but only 3% were able to give the correct answer. 43% of candidates scored one mark, usually for a valid partitioning method or for obtaining an answer between 4 and 5 hours and 8% managed to get 4.8 hours.

Intermediate Tier

Most candidates gained at least one mark in this question but only one third managed to gain all three marks. The most common approach was to use a partitioning method and this met with varying degrees of success. Many got as far as 4 hours for 800 bricks or even 4 hours 30 minutes for 900 bricks but were then unable to work out the correct time for the remaining bricks. Too few candidates did the basic calculation 960 ÷ 200 and many of those that did could not convert 4.8 hours into hours and minutes, giving answers such as 4 hours 8 minutes, 4 hours 80 minutes or 5 hours 20 minutes. Some calculated the number of bricks laid per minute as 3.3 instead of 3⅓ and lost accuracy marks.

Specification b

Foundation Tier

This was essentially a calculation of 960 ÷ 200 and an interpretation of the outcome into hours and minutes. It was pleasing to note that the majority realised the arithmetical process involved in obtaining the result. What was less successful was the ability to perform the calculation, which again highlighted the lack of access to a calculator. The non-calculator approach involved looking at multiples of 200 but the remaining 160 or 60 proved to be more of a challenge. Answers between 4 hours and five hours were rewarded and this demonstrated a reasonableness in the time taken to lay 960 bricks. There were, however, two extremes in Bob's level of performance suggesting that he could create a new record by completing the job in 15 minutes whilst at the other extreme one might want to avoid employing Bob who took the equivalent of 57 days! Only 10% of the candidates scored 2 or 3 marks, with over 40% not scoring any marks at all.

05.   Foundation Tier

This question was poorly understood by most foundation tier candidates as it was an "open" question with no direction. It was also a question where candidates had to explain their answer so it was no wonder that only 4% of candidates obtained a fully correct solution. Another 3% gained a mark if they could show that they could attempt to find the cost per gram or the number grams for each penny. Some candidates showed good mathematical ingenuity and worked in lots of 25g, this was also treated as an acceptable solution.

Intermediate Tier

This question was well attempted with a variety of methods employed by candidates, some showing real initiative. Many used the standard method of comparison and divided weight by cost or vice versa. Candidates who did not write down whether they were finding price per gram or grams per penny often interpreted their answers incorrectly and made the wrong decision. Some calculated the cost of 25 grams for each tub, others found the cost of one gram or 25 grams for one tub and then calculated the equivalent cost for the weight of the other tub. The most common response that gained no marks was to merely state that an extra 25g costs an extra 30p.

06.   Specification A

This question was well attempted and it was pleasing that more than three quarters of candidates gained full marks. Common errors were for the division to be reversed (25 ÷ £3.25) and for £3.25 to be taken as the cost of one pen and simply multiplied by 35. Some of the answers given were not sensible.

Specification B

This question was very well answered, confirming that candidates at this level are very comfortable with calculations involving money. Some failed to score any marks by merely calculating the value of one pen only. Weaker candidates often lost all marks by dividing 25 by 3.25 in their first step.

07. This question was answered well. More than half of the candidates worked out the correct amount for each of the four ingredients and only 10% of candidates failed to give at least one correct amount. Errors tended to be made most often in working out the amount of condensed milk and milk.

08. **Foundation Tier**

About a half of the possible marks were awarded for answers to this question. The numbers involved were relatively easy to handle and this may have helped candidates to gain at least one mark for one correct quantity. Only a small minority could give all four quantities correctly.

Intermediate Tier

There were few examples of any method shown in this question. The majority of candidates gained full marks. Of those that did not, it was usual to see them work out the first correctly, but then give incorrect responses for the remainder.

09. **Foundation Tier**

Correct answers were given by a good proportion of candidates, many of whom had struggled with earlier questions in the paper. However, many candidates failed to score full marks only because they did not make clear the units used in their answers. A sizeable minority of candidates simply halved £2.34 and gave £1.17 as their final answer.

Intermediate Tier

Most candidates got as far as the digits 33,but were then either unsure of their units or ignorant of the need to include them in an answer.

10. This question was done well by the vast majority of the candidates. In part (a), most candidates were able to find the amount of milk required to make 24 pancakes, but a few thought that the recipe was used to make only one pancake and consequently worked out 24 × 300. In part (b), most candidates realised that they needed to find the amount of flour to make 4 pancakes and then add this to 120 for a total of 12 pancakes. A popular alternative approach was to find the amount of flour needed to make 1 pancake, 120 ÷ 8, and then multiply this by 12 for the total amount. As with part (a) a common incorrect method was to work out 12 × 120

11.   This question differentiated well between candidates. Part (a) was quite well done, many candidates using a diagrammatic representation or writing down lists to help them understand the situation. These methods commonly lead to the award of at least 2 of the 3 marks available. Poor arithmetic affected some candidate's responses whilst others just worked out the cost of 12 tins (£4.80) or of 6 tins. This latter group seemed to be under the illusion that the offer was equivalent to "buy one, get one free". Many attempts to part (b) of the question gave $\frac{9}{12}$ as the relevant fraction, but commonly candidates were unable to convert this to a percentage. 44% of candidates scored full marks in part (b). Part (c) was quite well done. Some candidates worked out the price reduction but did not subtract it from the normal price to find the sale price. Weaker candidates merely subtracted 15(%) from (£)20 and gave the answer £5.

12.   **Foundation**

Most candidates were able to halve 180 correctly without any working, scoring both available marks in part (a). However, some candidates failed to read the question carefully and thought that you just divided 180 by 3 reaching an answer of 60. A few multiplied 180 by 3 thinking the initial ingredients were sufficient for one person.

Around 60% of the candidates managed to find that 400 ml of milk was needed in (b). Many clearly understood what to do but lost an accuracy mark when they prematurely rounded their answer to $160 \div 6$, reaching a final answer somewhere between 399 and 405. A surprising number of candidates recognised the need to find the amount of milk needed for 3 people but then proceeded to divided 160 by 3.

Higher

The correct answer to part (a) was obtained by the vast majority of candidates. Those few candidates that did not obtain the correct answer generally divided by 3 rather than 2. Part (b) was less well done. Approximately 5% of candidates gained only 1 out of 2 marks; this was generally due to a loss of accuracy due to premature rounding although the incorrect answers to $160 \div 2$ or 160×2 were also frequently seen.

13.   In part (a), most candidates realised the need to pay for 8 tins of cat food in order to get 12; however a significant number of candidates made arithmetic errors in their calculation of 40×8 Some candidates just worked out the cost of 12 tins, while many assumed the offer was "buy one get one free" and just calculated the cost of 6 tins.

Part (b) was generally answered well with most candidates able, with whatever method, to correctly work out 15% of £20. However a common error was to say 10% = £2, then 5% = £4 rather than £1. A significant number of candidates did not then subtract the reduction from £20 and thus failed to score the final mark.

The correct answer to part (a) was obtained by the vast majority of candidates. Those few candidates that did not obtain the correct answer generally divided by 3 rather than 2. Part (b) was less well done. Approximately 5% of candidates gained only 1 out of 2 marks; this was generally due to a loss of accuracy due to premature rounding although the incorrect answers to $160 \div 2$ or 160×2 were also frequently seen.

14.   Working with proportions had been handled well in previous years but this was not so with this particular question. The first entry of '18' from 'one and a half times 12' or '1.5×12' or just simply 'thinking it through' was the most successful. The other quantities however, were rarely both correct. Having worked with '12' to achieve '18' it did not extend to dealing with '1400' or '130'. Perhaps the use of the 'unitary' method might have hindered progress especially as '1400 divided by 6' or '130 divided by 6' did not give integer results as '18 divided by 6' had done.

15.   **Foundation**

This question was quite well answered indeed. Some candidates gave an answer of 30 g, clearly finding the 'extra' amount of plain flour required to make 10 pancakes, instead of the total amount. One mark could be earned if this was clearly seen to be the amount of plain flour required to make 2 pancakes.

A significant number correctly worked the required flour for one pancake (15 g) and just added this to 120 g to give an answer of 135 g.

Some candidates simply multiplied 120 g by 10. This was awarded no marks.

Higher

This question was very well answered indeed. Some candidates gave an answer of 30 g, clearly finding the 'extra' amount of plain flour required to make 10 pancakes, instead of the total amount. One mark could be earned if this was clearly seen to be the amount of plain flour required to make 2 pancakes.

Some candidates simply multiplied 120 g by 10. This was awarded no marks. Others thought they should add on 20% of the original amount and so gave 144g as their answer.

16.   This question was well understood and a surprising 65% of candidates obtained the fully correct answer of 16. Many candidates tried unsuccessfully with repeated addition or subtraction methods and did gain some marks for incorrect answers. The least successful solutions were for those candidates who tried trial and improvement solutions as they usually forgot the adult ticket price was different to the child ticket price. 26% of candidates scored no marks.

17.   **Foundation**

About two thirds of the candidates were able to score at least 1 mark for this question. Many candidates realised that they needed to increase the ingredients by half. Many scored 2 marks for getting only one of the ingredients correct (usually 300), but then accompanied this with often wild values for the other ingredients.

Higher

There were many good answers to this question. Most candidates managed to get the 300g for the self-raising flour, but then there was a noticeable tailing off in success. Those candidates who added half as much again onto the weights given generally seemed to be the most successful. Many candidates tried to use the unitary method, but then came unstuck when dividing by 8. This was particularly true when the division would have led to a decimal answer, for example, the 60g of butter. It was also disturbing to see the number of candidates who could not successfully multiply 25 by 12.