



GCSE Foundation/Higher 06

Number



Mark scheme



70 minutes



62 marks

Ratio

M1. Total girls = 90

B1

Girls can whistle = 36

$$ft \frac{40}{100} \times their 90$$

B1 ft

Girls cannot whistle = 54

$$ft their 90 - their 36$$

B1 ft

Boys can whistle = 24

$$ft their 36 \div 3 \times 2$$

B1 ft

Boys cannot whistle = 6

$$ft 30 - their 24$$

B1 ft

Note: if all correct B5:

[5]

M2. 600 and 50 and 200

B2 for any two of 600, 50, 200

B1 for any one of 600, 50, 200

or for sight of $\frac{2}{3}$ or $\frac{3}{2}$ oe,

or for sight of 2:3 or 3:2 oe

Accept 66%, 67%, 150%

If no correct values seen,

B1 for any correct proportion

eg Potatoes = 3 x stock

Potatoes = 12 x carrots

Stock = 4 x carrots

B3

[3]

M3. $450 \div 2$ or 225

$450 \div 4$ or 112.5

450×7 or 3150

450×14 or 6300

450×3 or 1350

450×4 or 1800

oe

M1

their 225×7 , their 112.5×14

their 225×7 , their 112.5×14 their $3150 \div 2$, their $6300 \div 4$

their $3150 \div 2$, their $6300 \div 4$

their $1350 + 450 \div 2$

their $1800 - 450 \div 2$

or equivalent complete method scores M2

M1

1575

A1

[3]

M4. $455 \div (1 + 2 + 4) (= 65)$

oe

M1

4 x their 65

$\frac{4}{7} \times 455$ scores M2

M1 dep

260

Accept 65 : 130 : 260

A1

[3]

M5. (a) $80(\%) : 20(\%) (= 4 : 1)$

or $\frac{4}{5}$ seen

oe

80 to 20

B1

(b) Rows/columns for History and not History

oe

B1

Columns/rows for think real and not think real

oe Allow extra column/row for don't know

B1

(c) $17 : 3 = 5.(...) : 1$ or $17 \div 3 (= 5.(...))$

oe $(4 : 1 \Rightarrow) 12 : 3$

M1

Yes and $5.(...)$

Yes and $12 : 3$

A1

Alternative method

$\frac{17}{20}$ (= 85(%)) or $85 : 15$

$80\% = \frac{16}{20}$ or $\frac{17}{20}$ seen

M1

Yes and 85% or Yes and 85 and 80

Yes and $\frac{17}{20} (>) \frac{16}{20}$

A1

[5]

M6. 2 parts = 10 marks

M1

A (= 5 parts \Rightarrow) 25 and B (= 3 parts \Rightarrow) 15

A1

A = 25, B = 15, C = 32

A1

Alternative method 1

Attempt to write equivalent ratios eg $10 : 6$, $15 : 9$

oe

eg writing consecutive multiples

5, 10, 15, ... and 3, 6, 9, ...

M1

(A)25 : 15(B)

25 : 15 selected

A1

A = 25, B = 15, C = 32

A1

Alternative method 2

$$\frac{m+10}{m} = \frac{5}{3}$$

oe eg $5m = 3(m + 10)$

M1

$m = 15$, hence $m + 10 = 25$

A1

$A = 25$, $B = 15$, $C = 32$

A1

[3]

M7. $224 \div 4 (= 56)$

M1

their 56×3

M2 224×0.75 (oe)

M1 dep

168

A1

[3]

M8. $600 \div (9 + 6 + 5) (= 30)$

M1

their 30×9 or their 30×6

or their 30×5

M1 dep

$270 : 180 : 150$

In any order

A1

[3]

M9. $\frac{40}{(11+9)} \times (11 - 9)$
 oe eg, $22 - 18 \left(\frac{40}{(11+9)} \times 11 \right) - \left(\frac{40}{(11+9)} \times 9 \right)$

M1

4

A1

[2]

M10. $35 \div 500 (\times 100)$ and $28 \div 330 (\times 100)$
 $35 \div 500 \times 330$ or $28 \div 330 \times 500$
 $500 \div 35$ **and** $330 \div 28$
 $500:35$ **and** $330:28$ **and** at least one attempt to cancel

M1

$0.07(7)$ and $0.08(48 \dots)$
 $23(.1)$ or $42(.42)$
 $14.(29)$ and $11.(79)$ or 12
 Ratio with same multiple of 7
 eg, $100:7$ and $82.5:7$ or $200:14$ and $165:14$

A1

Kelly or Fizzy orange
 Must have working with one of two values correct

A1

[3]

M11. $100 \times 0.7 \div 5.5$
 Ratio weight biscuit: $100 = 0.7:5.5$

M1

12.72... or 12.73

A1

12.7 or 13

Award for any value at least 4sf or calculation
 that is correctly rounded to 2 or 3sf

B1 ft

[3]

- M12.** (a) (i) C
 (ii) F
 (iii) D
 -1eeoo

B3

(b) $830 \div 10 (\times 11)$
 oe 83

M1

913

A1

[5]

- M13.** Correct pair of comparable values (ignore units)
 eg 1.5 and 1.6 (per 100g)
 9 and 9.6 (per 600g)
 (3) and 3.2 (per 200g)
 4.5 and (4.8) (per 300g)
 0.66... and 0.625 (g/p)
 1.5 and 1.8 (difference) oe
 B1 for finding one correct comparable value
 or correct method to find one value
 1.80 alone scores B0

B2

Regular

*For correct comparison
 ft allow their decision only if B1 given*

B1 ft

[3]

M14. $20 \times 10 \times 20 (= 4000)$

Must be volume calculation not surface area

M1

$5 \times 5 \times 2 (= 50)$

Must be volume calculation not surface area

M1

$\frac{\text{their } 4000}{\text{their } 50}$ or

80 or

$\frac{(20 \times 10 \times 20) - (70 \times 5 \times 5 \times 2)}{5 \times 5 \times 2}$

M3 for $4 \times 2 \times 10$

M2 for two of 2, 4 or 10 multiplied together and by another number

M1

10

A1

[4]

M15. Sporty bar $3.4 \times \frac{100}{10.3}$
oe

M1

33.(.....)

A1

Fruity bar $17.4 \times \frac{62.6}{100}$
oe

M1

10.9

*Any correctly rounded accuracy 10.8924.
Accept 11 with working.*

A1

[4]

M16. (a) $520 \times 3 \div 4$

M1

£390

A1

(b) Their(a)/520 × 100

$$\frac{3}{4} \times 100$$

M1

75

A1 ft

[4]

M17. Sight of 360

B1

$$360 \div 20 (= 18)$$

Totalling ratios and dividing into 'their 360'

M1

$$7 \times 18 = 126$$

A1

[3]

M18. Attempt to scale to same number of balls
or works out ratios of balls and costs
or works out balls per £

eg $6.50 + \frac{6.50}{2}$
or 10×2 and $6.5(0) \times 3$
or $6 \div 4$ and $10 \div 6.50$
or $10 \div 6$ and $6.5(0) \div 4$
or $6 \div 10$ and $4 \div 6.5$
or $10 \div 3$ and $6.5(0) \div 2$

M1

Correct pair of values

eg 9.75
or 20 and 19.5(0)
or 1.5 and 1.53(...)
or 1.66(...) and 1.62(5)
or 0.6 and 0.61(...)
or 3.3(...) and 3.2(5)

A1

Pack of 4 (is better VFM)

Allow small/6.50 pack
For ft must have gained M1
Answer only is M0A0A0

A1 ft

[3]

