## Mark schemes

Q1.

Alternative method 1

4 × 15 or 60 or 2 × 10 or 20 or 80

oe

М1

 $\frac{10}{100}$  × their 80 or 8

or 1.1 and working for first M1 seen

oe  $\frac{10}{100} \times \text{ their } 60 \text{ or } 6 \text{ or } 66$ or  $\frac{10}{100} \times \text{ their } 20 \text{ or } 2 \text{ or } 22$ 

M1dep

their 80 + their 8 or 1.1 × their 80 or 88

> oe their 60 + their 6 + their 20 + their 2 or 1.1 × their 60 + 1.1 × their 20 or their 66 + their 22

> > M1dep

0.03 × their 88 or 2.64 or their 88 × 1.03

oe

M1dep

90.64(p)

Α1

Alternative method 2

 $\frac{10}{100} \times 15 \text{ or } 1.5(0) \text{ and } \frac{10}{100} \times 10 \text{ or } 1 \text{ or } 1.1 \text{ seen}$ oe

M1

15 + their 1.5(0) or 15  $\times$  1.1 or 16.5(0) and 10 + their 1 or 10  $\times$  1.1 or 11

oe

27.5(0) implies M2

M1dep

their  $16.5(0) \times 0.03$  or 0.495 and their  $11 \times 0.03$  or 0.33

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or
their 16.5(0) × 1.03 or 16.995
and their 11 × 1.03 or 11.33
                     oe
                     4 × their 16.5(0) + 2 × their 11
                     or their 66 + their 22
                     or 88
                                                                                                      M1dep
their 0.495 \times 4 + \text{their } 0.33 \times 2
or 1.98 + 0.66 or 2.64
their 16.995 × 4 or 67.98
and their 11.33 × 2 or 22.66
                     0.03 × their 88 or 2.64
                     or their 88 × 1.03
                                                                                                      M1dep
90.64(p)
                                                                                                          Α1
Alternative method 3
4 \times 15 \text{ or } 60
or 2 × 10 or 20
or 80
                     oe
                                                                                                         M1
\frac{10}{100} × their 80 or 8
or \frac{13}{100} × their 80 or 10.4(0)
or 1.13 and working for first M1 seen
                    \frac{13}{100} × their 60 or 7.8(0)
                    or \frac{13}{100} × their 20 or 2.6(0)
                                                                                                      M1dep
their 80 + their 10.4(0)
or 1.13 × 80 or 90.4(0)
0.03 \times \text{their 8 or } 0.24
                     60 + their 7.8(0) + 20 + their 2.6(0)
                     or 67.8(0) + 22.6(0)
                                                                                                      M1dep
their 80 + their 10.4(0)
or 1.13 \times 80 or 90.4(0)
and
0.03 × their 8 or 0.24
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oe

M1dep

90.64(p)

Α1

[5]

Q2.

Complete, correct build up method or 0.51 × 400

eg 400 ÷ 2 + 400 ÷ 100 oe

М1

204

Α1

[2]

Q3.

Alternative method 1

(10% =) 19 or (50% =) 95 or (20% =) 38 or (30%) = 57 or (5% =) 9.5 or (1% =) 1.9 etc

Any correct comparison of a percentage and a value except 100% = 190

М1

Any combination of values that make 35% eg 95 – their 19 – their 9.5, their 19 + their 19 + their 19 + their 9.5 or 66.5

Must be correct values or valid method shown leading to their values

 $\frac{1}{2}$  256.5 or 256  $\frac{1}{2}$  or 256.50p

M1dep

256.50

Strand (i) ft 190 + their 35% if M1, M0 awarded Must be correct money notation

Q1ft

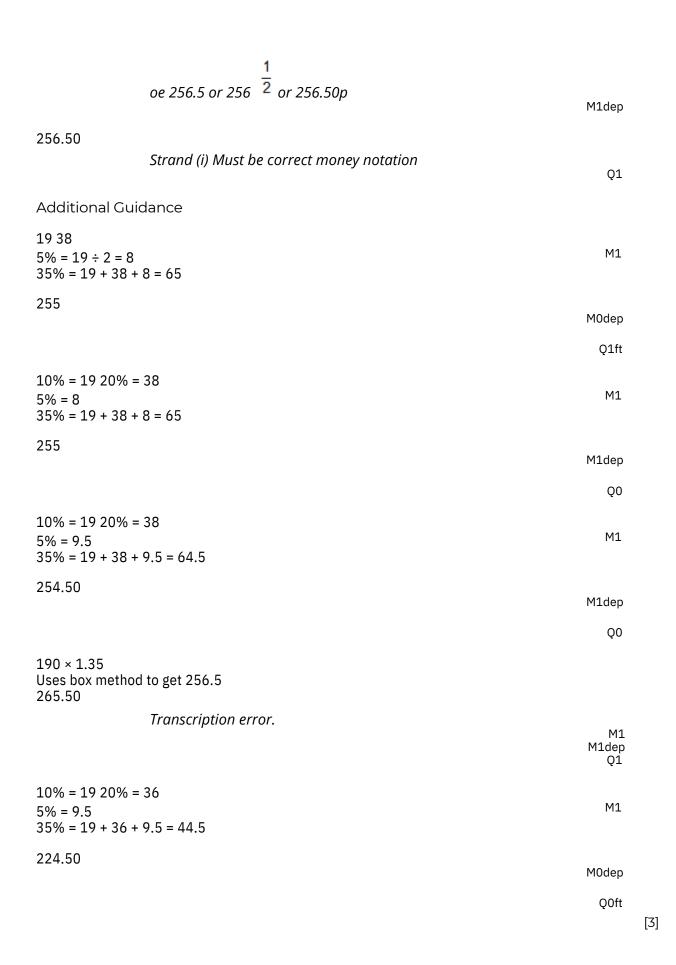
Alternative method 2

0.35 or 1.35 seen or  $\frac{35}{100}$  or  $\frac{135}{100}$  or 135%

М1

0.35 × 190 or 1.35 × 190 or 66.5

or 
$$\frac{135}{100} \times \frac{190}{1}$$
 or  $\frac{35}{100} \times \frac{190}{1}$ 



Q4.

Alternative method 1

60 × 40 or 2400 oe M1 their 2400 - 2000 or 400 or 2000 - their 2400 M1dep  $\frac{\text{their 400}}{3000}$  (× 100) or 0.2 oe M1dep 20(%) Α1 Alternative method 2 60 × 40 or 2400 oe M1 their 2400 - 2000 or 400 or 2000 - their 2400 M1dep  $10\% = 2000 \div 10$  or  $1\% = 2000 \div 100$  and correctly finds multiplier using build up or division to find percentage equivalent to total their 400 oe Correct build up to find percentage equivalent to total (their 2400 - 2000) or their (2000 - their 2400) implies M3 M1 20(%) Α1 Alternative method 3 60 × 40 or 2400 M1  $\frac{\text{their } 2400}{2000}$  (× 100) or 120(%) or 1.2 M1dep their 120 – 100 or their 1.2(0) – 1(.00) or 100 - their 120 or 1(.00) - their 1.2(0) or 0.2 oe M1dep 20(%) Α1

M1M1M1A1

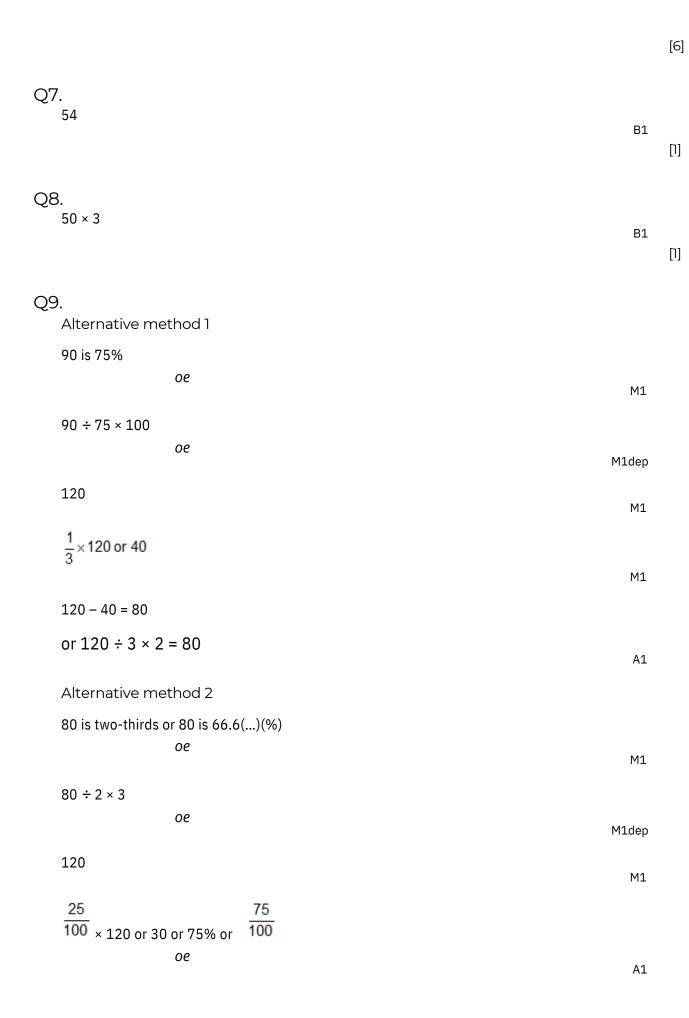
Additional Guidance

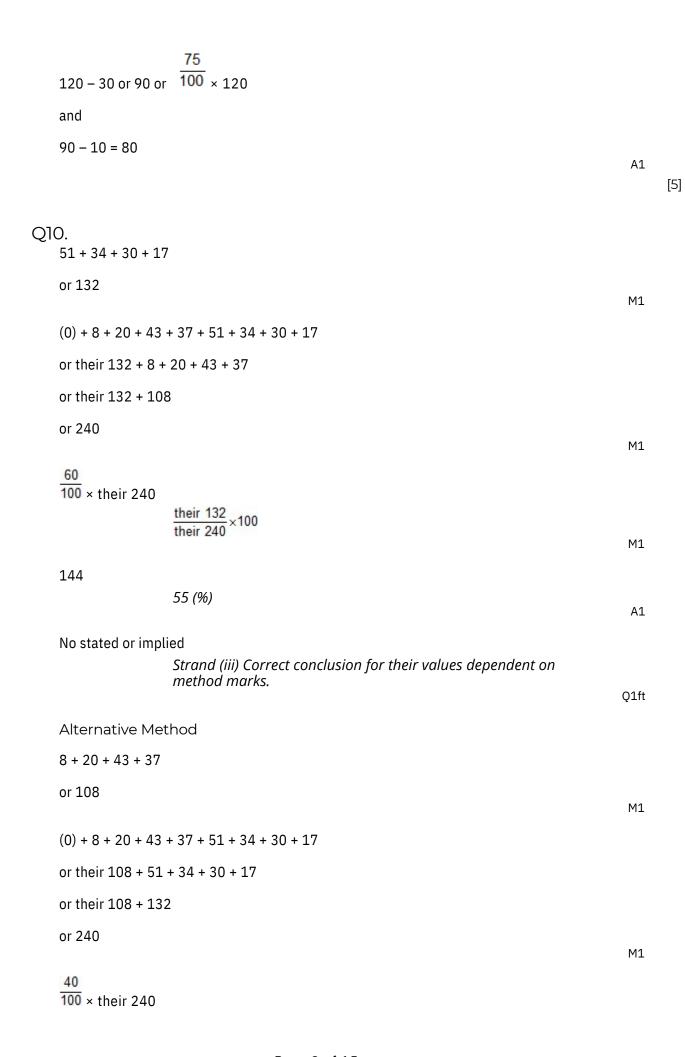
20% on answer line and no working

480 × 5 (= 2400) from 5 years scores minimum M1  $60 \times 40 = 1800$  and 200 scores minimum M1M1  $60 \times 40 = 1800$  and 200 and M1M1M1A0  $60 \times 40 = 1800$  and  $\frac{200}{2000}$ M1M1M1A0 their 2400 (=1.2) does not score second method mark on ALT3 [4] Q5.  $400 \times 1.07$ В1 [1]Q6. (a)  $15.6 \div 4$  or  $156 \div 40$ Correctly multiplying both numbers by the same number so that 0.4 becomes an integer M1 3.9 oe SC1 digits 39 Α1 Any decimal greater than  $0.\dot{6}\dot{3}$  and less than  $0.\dot{7}$ (b) B1 Any fraction or percentage between  $\frac{7}{11}$  and  $\frac{7}{9}$  (eg  $\frac{7}{10}$  or 70%) or Correctly evaluates  $\frac{7}{11}$  to 0.63... or  $\frac{7}{9}$  to 0.77... В2 Any correct fraction (c)  $eg \frac{83}{200}, \frac{415}{1000}, \frac{41}{99}, \frac{41}{98}, \frac{42}{101}, \frac{42}{102}$  $B1\frac{41.5}{100}$ any 'correct' fraction with non-integer numerator and/or denominator

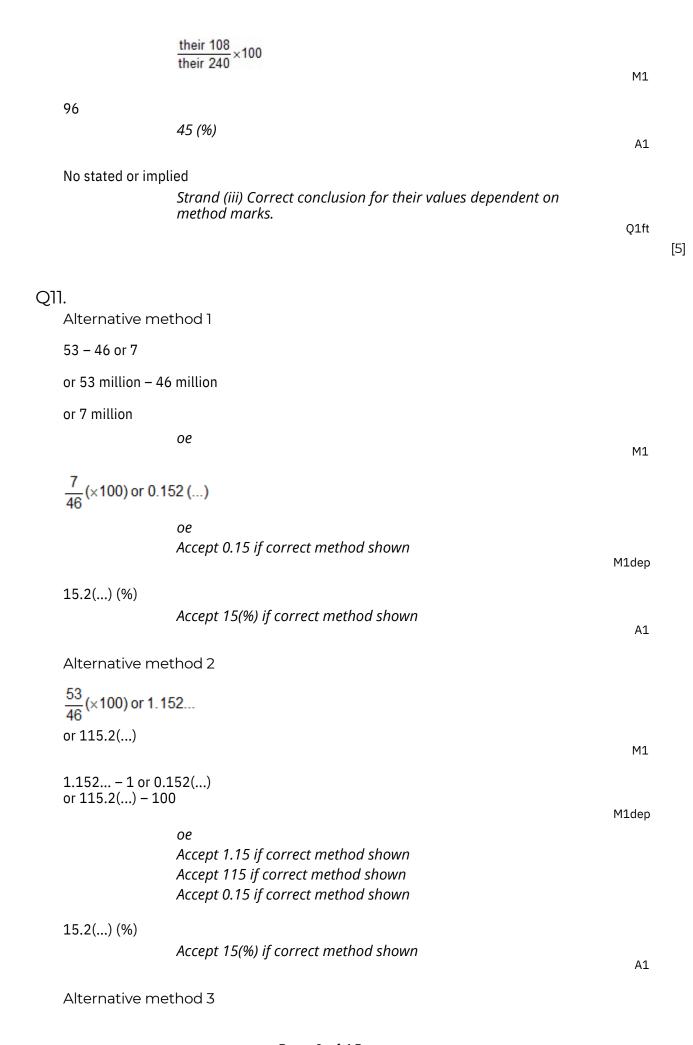
B2

any decimal between 41% and 42%





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Any correctly evaluated percentage of 46 (million) 1(%) is 0.46 (million) 5(%) is 2.3 (million) 10(%) is 4.6 (million) M1 15(%) (increase) is 52.9 (million) or 15.1(%) (increase) is 52.946 (million) or 15.2(%) (increase) is 52.992 (million) or 15.3(%) (increase) is 53.038 (million) or 15.4(%) (increase) is 53.084 (million) or 15.5(%) (increase) is 53.13 (million) oe 15(%) is 6.9 (million) or 15.1(%) is 6.946 (million) or 15.2(%) is 6.992 (million) or 15.3(%) is 7.038 (million) or 15.4(%) is 7.084 (million) or 15.5(%) is 7.13 (million) amd 7 (million) M1dep 15.2(...) (%) Accept 15(%) with two of the trials listed above (or better), one with an answer below 53 million (or 7 million), the other with an answer above 53 million (or 7 million) Α1 Additional Guidance Incorrect number of zeros used for millions cannot score A mark 15(%) scores at least 2 unless clearly from incorrect working [3] 012. (a)  $1400 \times 0.11$ oe M1 154 Α1  $\frac{-}{5}$  × 295 (b) or 295 ÷ 5 or 59 oe Μ1 236 Α1

Q13.  $\frac{150}{800}$  (× 100) or  $\frac{150}{650 + 150}$  (× 100) or 0.1875 oe М1 18.75 or 18.8 or 19 SC1 for 81.25 or 81 or 81.3 Α1 Additional Guidance 150 M0 19 with no working 19 is incorrect only if clearly from wrong working Build up methods score 0 or 2 M1A1 [2] Q14.  $\frac{150}{500}$  (× 100) oe М1 30 Α1 [2] Q15. 75% = 14 625 14 625 ÷ 3 or 4875 M1  $14625 \times 100$ or 14 625 ÷ 0.75 or 14 625 ÷ 75 or 195 oe 14 625 + their 4875

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or 4 × their 4875 M1dep 19 500 Α1 Additional Guidance 14 625 × 75 ÷ 100 M0 [3] Q16. Alternative method 1 4200 × 0.38 or 1596 1.38 seen M1 5796 Α1 Alternative method 2  $4200 \div 10 \times 3 + 4200 \div 10 \div 2 + 4200 \div 100 \times 3$ or 1596 M1 5796 Α1 Alternative method 3  $4200 \div 10 \times 4 \times 4200 \div 100 \times 2$ M1 or 1596 Α1 [2] Q17. 82.5% or 0.825 used M3 264 ÷ 0.825 or 320 M1 264 82.5 or 3.2 M1dep

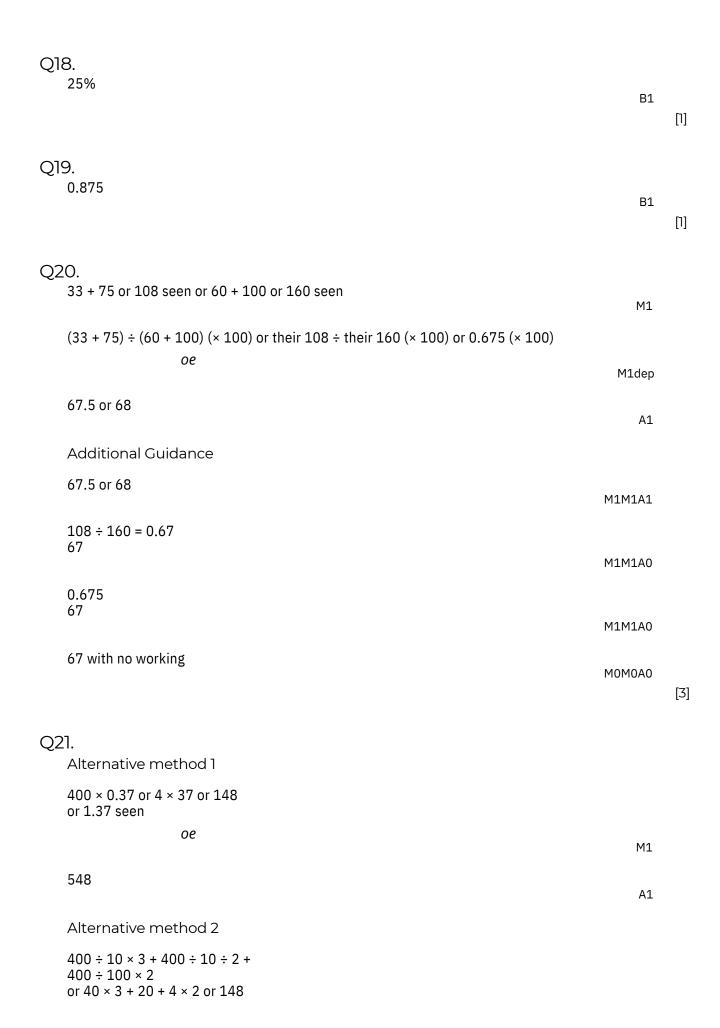
their 3.2 × 100 or 320 or their 3.2 × 17.5

56

A1

[4]

M1dep



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oe Μ1 548 Α1 Alternative method 3  $400 \div 10 \times 4 - 400 \div 100 \times 3$ or  $40 \times 4 - 4 \times 3$  or 160 - 12 or 148oe М1 548 Α1 [2] Q22. 10% of 20 = 20% of 10 Any unambiguous indication В1 [1] Q23. 130% = £2.34or  $2.34 \times 1.3$ or (£)1.8(0) oe M1 their  $(£)1.8(0) \times 1.4$ M1dep 2.52 Α1 [3]

Q24.

Alternative method 1

6300 × 2.58

oe

16254 A1

М1

Alternative method 2

Fully correct build up method

eg 100% = 6300 and 50% = 6300 ÷ 2 or 3150 and 1% = 6300 ÷ 100 or 63

and 2 × 6300 + their 3150 + 8 × their 63 М1 16254 Α1 [2] Q25. Alternative method 1  $60 \times 0.5 \text{ or } 30$ oe M1  $(100 - 60) \times 0.2$ or 8 oe М1 38 SC2 0.38 Α1 Alternative method 2 Implies boys are 40% and works out 50% of their girl total eg 60 and 40 seen and  $\frac{2}{2} \times 60 = 30$ or 120 and 80 seen and  $\frac{1}{2} \times 120 = 60$ M1 Works out 20% of their boy total eg 0.2 × 40 or 8 or 0.2 × 80 or 16 M1dep 38

oe

[3]

Α1