cookie

Practice paper: mark scheme

GCSE Maths Foundation, practice paper 1 (non-calculator) (AQA style)

In the style of AQA GCSE Mathematics (8300) Paper 1 Foundation

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This mark scheme was written by cookie with its practice paper. Each row gives the answer, the marks and how they are given; where an answer is worded differently but means the same, give the mark.

Key

- M method marks, for a correct method
- A accuracy marks, which depend on the method mark before them
- B marks for a correct answer or step, independent of method
- P process marks, for a correct step in solving a problem
- C communication marks
- ft follow through from an earlier error; oe or equivalent; cao correct answer only

Do it online, timed and marked:
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Question	Answer and marking	Marks
01	**Answer: 0.31 (D)** B1 for 0.31	**1**
02	**Answer: 29 (C)** B1 for 29	**1**
03	**Answer: 3a + 4b (A)** B1 for 3a + 4b	**1**
04	**Answer: 3/10 (C)** B1 for 3/10	**1**
05	**Answer: 9022** M1 for a complete method with no more than one error in the multiplication, e.g. 347 × 20 = 6940 and 347 × 6 = 2082, or a grid with all partial products A1 for 9022 cao *Addition errors in the final step are the one allowed error for M1 only.*	**2**
06	**Answer: 3/8, 0.38, 2/5, 41%** M1 for at least two correct conversions to a common form, e.g. 0.4 and 0.375, or 40% and 37.5% A1 for 3/8, 0.38, 2/5, 41% *Accept the correct order written with converted values, e.g. 0.375, 0.38, 0.4, 0.41*	**2**
07	**Answer: £5.75** M1 for 2 × 8.50 (= 17) or 3 × 5.75 (= 17.25) M1 for 40 − (17 + 17.25), or 40 − 34.25 A1 for £5.75 cao *Accept 5.75 with no units. 575 with no units scores M1 M1 A0.*	**3**
08	**Answer: 600** M1 for at least two of 50, 6 and 0.5 seen (accept 49 or 48.7 for 50), or 300 seen A1 for 600 cao (from 50 × 6 ÷ 0.5) *An answer of 150 (300 × 0.5) scores M1 A0. The exact value (571.29…) scores M0 A0.*	**2**
09	**Answer: 84°** M1 for 180 − 54 (= 126) M1 for 126 ÷ 3 (= 42) or x + 2x = 126 (oe) A1 for 84 cao *An answer of 42 (angle ACB) scores M1 M1 A0. 63 (126 ÷ 2) scores M1 M0 A0.*	**3**
10.1	**Answer: 21** B1 for 21	**1**
10.2	**Answer: 4n + 1** B2 for 4n + 1 (oe) B1 for 4n + k, where k ≠ 1 *n + 4 scores B0.*	**2**

10.3	**Answer: Yes: 4 × 25 + 1 = 101, so it is the 25th term.** B1 for 'yes' with a correct reason, e.g. 4n + 1 = 101 gives n = 25, a whole number, or the sequence continues 97, 101 *'Yes' with no reason scores B0. Allow 'yes, because 101 is 1 more than a multiple of 4'.*	**1**
11.1	**Answer: 51** M1 for 85 ÷ 5 (= 17) or 3 × 85 (= 255) A1 for 51 cao	**2**
11.2	**Answer: 39** M1 for 10% = 26 and 5% = 13, or 0.15 × 260 (oe) A1 for 39 cao *221 (260 − 39) scores M1 A0.*	**2**
11.3	**Answer: 15%** M1 for 6 ÷ 40 (× 100), or 46 ÷ 40 (= 1.15) A1 for 15 cao *6 ÷ 46 × 100 (= 13.0…) scores M0 A0. 115% scores M1 A0.*	**2**
12	**Answer: 11/12** M1 for both fractions with a common denominator, e.g. 8/12 + 3/12 A1 for 11/12 (oe) *3/7 (adding numerators and denominators) scores M0 A0.*	**2**
13.1	**Answer: £45 and £27** M1 for 72 ÷ 8 (= 9) A1 for £45 and £27 *Only one correct share scores M1 A0.*	**2**
13.2	**Answer: 28** M1 for 7 − 4 = 3 parts and 21 ÷ 3 (= 7) A1 for 28 cao *21 ÷ 11 or 21 ÷ 4 scores M0 A0. 49 (Ali's share) scores M1 A0.*	**2**
14	**Answer: 6 boxes** M1 for 14 × 9 (= 126) or 4 × 4 (= 16) M1 for (126 − 16) ÷ 20, or 110 ÷ 20 (= 5.5) A1 for 6 cao *5.5 or 5 boxes scores M1 M1 A0. 126 ÷ 20 rounded to 7 scores M1 M0 A0.*	**3**
15	**Answer: −9** M1 for 5 + (−2) × 7, or −14 seen A1 for −9 cao *(5 − 2) × 7 = 21 scores M0 A0. 19 (5 + 14) scores M0 A0.*	**2**
16.1	**Answer: x = 7** M1 for 4x = 28 A1 for 7 cao	**2**

16.2	**Answer: y = 6** M1 for 6y + 3 = 5y + 9 A1 for 6 cao *6y + 1 = 5y + 9 (an incorrect expansion) scores M0 A0.*	**2**
17.1	**Answer: 10x − 15** B1 for 10x − 15	**1**
17.2	**Answer: 4x(3x + 2)** B2 for 4x(3x + 2) B1 for a correct partial factorisation, e.g. $4(3x^2 + 2x)$, 2x(6x + 4) or x(12x + 8)	**2**
18.1	**Answer: 0.225** M1 for 1 − (0.35 + 0.2) (= 0.45) A1 for 0.225 (oe) *0.45 (green and yellow together) scores M1 A0.*	**2**
18.2	**Answer: 70** M1 for 0.35 × 200 (oe) A1 for 70 cao *70/200 scores M1 A0.*	**2**
19	**Answer: 14** M1 for 5 × 12 (= 60), or 9 + 15 + 8 + 14 (= 46) and a subtraction from 60 A1 for 14 cao *An answer of 11.5 (the mean of the four numbers) scores M0 A0.*	**2**
20.1	**Answer: 17** M1 for 60 − 32 (= 28 boys) or 25 − 14 (= 11 boys walk), or a two-way table with at least two of these correct A1 for 17 cao	**2**
20.2	**Answer: 18/60 = 3/10** B1 for 18/60 (oe, e.g. 3/10 or 0.3) *Do not accept 18/32 or the ratio 18 : 60.*	**1**
21.1	**Answer: 630 000** B1 for 630 000	**1**
21.2	**Answer: 4.7×10^{-3}** B1 for 4.7×10^{-3}	**1**
21.3	**Answer: 8×10^{9}** B1 for 8×10^{9} *8×10^{18} scores B0.*	**1**
22.1	**Answer: x > −4** M1 for 3x > −12, or 3x and −12 in an equation or inequality A1 for x > −4 *x = −4 or x < −4 scores M1 A0. −4 on its own scores M1 A0.*	**2**

22.2	**Answer: −1, 0, 1, 2, 3** B2 for −1, 0, 1, 2, 3 and no other values B1 for four correct values and no incorrect values, or all five correct values and one incorrect value	**2**
23	**Answer: 140 km/h** B1 for a time of 1 hour 30 minutes, 1.5 hours or 90 minutes M1 for 210 ÷ 1.5 (ft their time in hours), or 210 ÷ 90 × 60 A1 for 140 cao *210 ÷ 1.30 (= 161.5…) scores B0 M0 A0. 210 ÷ 90 = 2.33 (km per minute) scores B1 M0 A0.*	**3**
24	**Answer: x = 4, y = 3** M1 for adding the equations to eliminate y, e.g. 3x = 12, or a correct substitution, e.g. 2(1 + y) + y = 11 A1 for x = 4 or y = 3 A1 for x = 4 and y = 3 *Answers only with no working: x = 4, y = 3 scores 0 (the question says show your working).*	**3**
25	**Answer: 15 cm** M1 for $9^2 + 12^2$ (= 81 + 144) M1 for √225 A1 for 15 cao *$12^2 - 9^2 = 63$ then √63 scores M0 M1 A0.*	**3**
26.1	**Answer: 25π cm²** M1 for π × 5^2 (radius 5 used) A1 for 25π *100π (using the diameter as the radius) scores M0 A0.*	**2**
26.2	**Answer: 10π cm** B1 for 10π	**1**
27.1	**Answer: (x + 5)(x − 3)** M1 for (x ± 5)(x ± 3) A1 for (x + 5)(x − 3)	**2**
27.2	**Answer: x = −5 or x = 3** B1ft for −5 and 3 (ft their factorisation)	**1**
28	**Answer: 8 cm** M1 for cos 60° = x/16, or 16 × cos 60°, or cos 60° = 1/2 used A1 for 8 cao *Using sin 60° (8√3, the opposite side) scores M0 A0.*	**2**
29.1	**Answer: 360 cm³** M1 for 1/2 × 6 × 8 (= 24) × 15 A1 for 360 cao *6 × 8 × 15 = 720 scores M0 A0.*	**2**

29.2	**Answer: 0.36 litres** B1ft for 0.36 (ft their part (a) ÷ 1000)	**1**

Total: 80 marks