Mark Scheme

GCSE Resit · Predicted Paper 4 (Higher Paper 1) · November 2026
Paper reference DNEP/OCR1HN26 · Total 100 marks

Answers and marking points written by DNEP Education, set out like the board mark schemes.

Question 1 · Ratio, proportion and rates of change — 4 marks

Garden centre (£219.80 compared with £221.99)
M1 240 × 1.2 (= 288)
M1 their 288 × 0.85 (= 244.80)
M1 their 244.80 − 25 (= 219.80) or 215 + 6.99 (= 221.99)
A1 garden centre, with 219.80 and 221.99 both seen

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Question 2 · Statistics — 3 marks

59
M1 24 × 62 (= 1488) or 18 × 55 (= 990)
M1 (1488 + 990) ÷ 42
A1 59

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Question 3 · Number — 4 marks

(a) $2^2 \times 3^3 \times 7$ M1 for a correct method (factor tree or repeated division) with at most one error; A1
(b) 21 B1 (ft their (a))
(c) 36 B1

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Question 4 · Number — 3 marks

3.91×10^6
M1 $2.5 \div (6.4 \times 10^{-7})$
A1 3 906 250 or 3.90625×10^6
B1 their answer in standard form to 3 sf

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Question 5 · Ratio, proportion and rates of change — 4 marks

£72
M1 8 : 12 : 15 (or equivalent combined ratio)
M1 15 − 8 = 7 parts (= £42)
M1 42 ÷ 7 × 12
A1 72

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Question 6 · Ratio, proportion and rates of change — 4 marks

8.50 g/cm³
M1 450 × 8.96 (= 4032)
M1 150 × 7.13 (= 1069.5)
M1 (their 4032 + their 1069.5) ÷ 600
A1 8.50 (accept 8.5025)

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Question 7 · Geometry and measures — 3 marks

Perpendicular bisector of AB (crossing AB 4 cm from A) with construction arcs; region inside the triangle on the B side of the bisector shaded
B2 correct perpendicular bisector with two pairs of intersecting arcs (B1 accurate bisector without arcs, or arcs with no line)
B1 correct region shaded (ft their perpendicular bisector)

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Question 8 · Algebra — 5 marks

£29.40
M1 $f + 6m = 14.10$ and $f + 11m = 22.60$ (or 5 miles cost $22.60 - 14.10$)
M1 $5m = 8.50$
A1 $m = 1.70$
A1 $f = 3.90$
A1 29.40

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Question 9 · Algebra — 5 marks

(a) $(2x - 3)(x + 5)$ B2; B1 for $(2x + a)(x + b)$ with $ab = -15$ or $2b + a = 7$
(b) $2x^3 + 3x^2 - 11x - 6$
M1 two brackets expanded correctly, e.g. $x^2 + x - 6$
M1 their three-term quadratic multiplied by the third bracket (at least 4 of 6 terms correct)
A1 $2x^3 + 3x^2 - 11x - 6$

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Question 10 · Ratio, proportion and rates of change — 5 marks

(a) £4018.22 M1 1.028 seen; M1 3500×1.028^5; A1 4018.22 (accept 4018.2)
(b) 3.5% M1 (212 000 ÷ 185 000)^(1/4) (= 1.0346…) or trial of rates; A1 3.5

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Question 11 · Geometry and measures — 4 marks

199 cm^3
M1 cone height $12 - 3.5 = 8.5$
M1 $\frac{1}{3} \times \pi \times 3.5^2 \times 8.5$ (= 109.0…)
M1 $\frac{1}{2} \times \frac{4}{3} \times \pi \times 3.5^3$ (= 89.79…)
A1 199 (accept 198.8 to 199)

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Question 12 · Geometry and measures — 5 marks

33.3°
M1 $\cos 32° = 8.4 \div AC$
A1 AC = 9.905…
M1 $\tan x = 6.5 \div$ their AC
M1 $x = \tan^{-1}(6.5 \div$ their AC)
A1 33.3 (accept 33.27…)

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Question 13 · Algebra — 3 marks

$2n^2 + n + 1$
M1 second difference 4, so $2n^2$
M1 sequence $- 2n^2$ gives 2, 3, 4, 5, 6 (or a correct linear part $n + 1$)
A1 $2n^2 + n + 1$
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Question 14 · Statistics — 5 marks

(a) $15 < L \leq 20$: 32; $30 < L \leq 50$: 18 B1 each
(b) bars 10–15 at frequency density 3.6 and 20–30 at frequency density 2.6 B1 each
(c) 31 B1 (½ × 26 + 18; ft their table)
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Question 15 · Probability — 5 marks

(a) after chocolate: 6/11, 5/11; after plain: 7/11, 4/11 B2 all correct (B1 for denominators of 11, or one pair correct)
(b) 35/66 M1 7/12 × 5/11 or 5/12 × 7/11 (= 35/132); M1 sum of both products; A1 35/66 oe (e.g. 70/132)
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Question 16 · Ratio, proportion and rates of change — 4 marks

(a) $d = 0.3v^2$ M1 $d = kv^2$ and $19.2 = k \times 8^2$; A1 $d = 0.3v^2$
(b) 15 M1 $67.5 = 0.3v^2$ ($v^2 = 225$); A1 15 (ft their k)
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Question 17 · Number — 5 marks

(a) 7.59 m/s B1 400.5 and 52.75 seen; M1 their upper distance ÷ their lower time; A1 7.59 (7.592…)
(b) 7.6 m/s M1 lower bound 399.5 ÷ 52.85 (= 7.559…); A1 7.6 because both bounds round to 7.6 (2 sf)
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Question 18 · Algebra — 5 marks

50.6 cm
M1 $x^2 + (x + 7)^2 = (2x - 1)^2$
M1 $2x^2 - 18x - 48 = 0$ or $x^2 - 9x - 24 = 0$
M1 $x = (9 \pm \sqrt{177}) \div 2$ (correct substitution into the quadratic formula)
A1 $x = 11.15…$
A1 50.6 (from $4x + 6$)
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Question 19 · Geometry and measures — 6 marks

10.3 cm
M1 $\frac{1}{2} \times 9.4 \times BC \times \sin 48° = 48.5$
M1 $BC = 97 \div (9.4 \times \sin 48°)$
A1 $BC = 13.88…$
M1 $AC^2 = 9.4^2 + BC^2 - 2 \times 9.4 \times BC \times \cos 48°$
M1 $AC^2 = 106.5…$ (correct order of operations) and square root taken
A1 10.3 (10.31 to 10.32)
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Question 20 · Algebra — 4 marks

(a) M1 substitutes $x = 2$ and $x = 3$: $2^3 - 10 + 1 = -1$ and $27 - 15 + 1 = 13$; A1 change of sign, so a root lies between 2 and 3
(b) $x_1 = 2.0801$, $x_2 = 2.1105$, $x_3 = 2.1218$ M1 $x_1 = \sqrt[3]{9} = 2.080\ldots$; A1 all three correct to 4 dp

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Question 21 · Algebra — 5 marks

(a) $3^2 + 6^2 = 9 + 36 = 45$ B1
(b) $y = -\frac{1}{2}x + 7.5$ M1 gradient of OP $= 6 \div 3 = 2$; M1 tangent gradient $= -\frac{1}{2}$; M1 $y - 6 = -\frac{1}{2}(x - 3)$ or $6 = -\frac{1}{2} \times 3 + c$; A1 $y = -0.5x + 7.5$ oe

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Question 22 · Geometry and measures — 4 marks

(a) 64° B1; alternate segment theorem B1
(b) 26° B1; B1 both reasons: the tangent is perpendicular to the radius (angle OAT = 90°, so OAB = 26°) and triangle OAB is isosceles (OA = OB) (or: angle AOB = 2 × 64 = 128°, angle at the centre is twice the angle at the circumference, then (180 − 128) ÷ 2)

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Question 23 · Geometry and measures — 5 marks

(a) $-a + b$ (or $b - a$) B1
(b) M1 $\overrightarrow{OP} = \overrightarrow{OA} + \frac{2}{3}\overrightarrow{AB}$ or $a + \frac{2}{3}(b - a)$; A1 $\frac{1}{3}a + \frac{2}{3}b$ with no errors (AG)
(c) M1 $\overrightarrow{OQ} = 3(\frac{1}{3}a + \frac{2}{3}b)$ or $\overrightarrow{OQ} = 3\overrightarrow{OP}$; A1 OQ is a multiple of OP and they share the point O, so O, P, Q are collinear

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