revise.wales — Mark Scheme

Mock Paper B — Unit 1: Financial Mathematics and Other Applications of Numeracy (Foundation Tier, Calculator-allowed)

65 marks. R.WM-MNF-U1-002 (MS).

Notation. Mn = method mark; An = accuracy / answer mark; Bn = independent unsupported correct value; Cn = communication (OCW); ft = follow through from a prior error; oe = or equivalent; cao = correct answer only.

Question 1 (5 marks)

(a) **M1** $0{\cdot}20 \times 350$ or $\dfrac{20}{100} \times 350$ or $350 \div 5$.

A1 $=$ £**70** (cao).

(b) **M1** $\dfrac{3}{4} \times 900$ or $900 \div 4 \times 3$.

A1 $=$ **675** ml (cao).

(c) **B1** **12·4** (cao). Penalise truncation $12{\cdot}3$.

Question 2 (8 marks)

(a) **M1** $2 \times 3{\cdot}80 = 7{\cdot}60$ or $3 \times 1{\cdot}90 = 5{\cdot}70$ or $2 \times 2{\cdot}50 = 5{\cdot}00$ seen.

M1 Sum of all three items: $7{\cdot}60 + 5{\cdot}70 + 5{\cdot}00$.

A1 $=$ £**18·30** (cao).

(b) **M1** $18{\cdot}30 \times 0{\cdot}10$ or $18{\cdot}30 \div 10$ (ft from (a)).

A1 $=$ £**1·83** (cao). Accept £$1{\cdot}83$ ft from incorrect (a) provided method is correct.

(c) **M1** $20 - 18{\cdot}30$ (ft from (a)).

A1 $=$ £**1·70** (cao).

B1 Independent units / £-sign correctly used on the answer line.

Question 3 (6 marks)

(a) **M1** Adds at least three of the four bills correctly, e.g. $725 + 118{\cdot}40 + 260 = 1103{\cdot}40$.

M1 Adds the remaining bill: $1103{\cdot}40 + 46{\cdot}50$ (oe full sum $725 + 118{\cdot}40 + 260 + 46{\cdot}50$).

A1 $=$ £**1,149·90** (cao). Accept £$1149{\cdot}90$.

(b) **M1** $1680 -$ (total bills) (ft from (a)).

M1 Correct numerical subtraction shown.

A1 $=$ £**530·10** (cao).

Question 4 (6 marks)

(a) **M1** Total parts $= 3 + 1 + 4 = 8$; one part $= 16 \div 8 = 2$ litres.

M1 Multiplies one-part value by 3, 1, 4.

A1 Blue $=$ **6** litres; Yellow $=$ **2** litres; White $=$ **8** litres (all three required; check sum $= 16$; cao).

(b) **M1** Recognises blue makes 3 parts, so one part $= 6 \div 3 = 2$ litres (oe).

M1 Multiplies one-part value by 8 (total number of parts), or finds yellow $= 2$ and white $= 8$ and sums.

A1 Total $= 2 \times 8 =$ **16** litres (cao). Accept clear equivalent reasoning.

Question 5 **(8 (6 + 2 OCW) marks)**

(a) **M1** Provider P monthly cost: $12 \times 15 = £180$.

A1 Provider P total: $180 + 60 =$ **£240** (cao).

M1 Provider Q monthly cost: 12×20.

A1 Provider Q total: **£240** (cao).

M1 Compares the two 12-month totals.

A1 States: **The two plans cost the same over** 12 **months (**£240 **each)** (cao). Accept "neither is cheaper" / "equal cost".

C1 Working laid out in clear sentences, units used throughout, method legible.

C1 Conclusion explicitly justified by reference to the two 12-month totals.

Question 6 **(6 marks)**

(a) **M1** Interest for 1 year $= 1800 \times 0{\cdot}05 = £90$ (or $1800 \times 5 \div 100$).

M1 Multiplies one-year interest by 3.

M1 $90 \times 3 = £270$ (oe full formula $I = \frac{PRT}{100} = \frac{1800 \times 5 \times 3}{100}$).

A1 $=$ **£270·00** (cao). Accept £270.

(b) **M1** Total $= 1800 + 270$ (ft from (a)).

A1 $=$ **£2,070·00** (cao). Accept £2070.

Question 7 **(8 marks)**

(a) **M1** Identifies that Train 3 arrives $10{:}10$ (too late) so Train 2 is the latest acceptable.

A1 **08:40** (cao).

(b) **M1** $10{:}10 - 09{:}25$ (counts up: 35 min to $10{:}00$ then 10 min).

A1 $=$ **45** minutes (cao). Do not accept $0{\cdot}75$ h without unit.

(c) **(i)** **B1** **30** minutes (cao). Accept $70 - 40$ seen.

(ii) **M1** Reads outward distance $= 16$ km from graph (accept 15–17 km).

M1 Converts 40 min to $\frac{2}{3}$ h (oe $40 \div 60$).

M1 Speed $= \dfrac{16}{40/60}$ (oe $16 \times 60 \div 40$).

A1 $=$ **24** km/h (cao; accept $22{\cdot}5$–$25{\cdot}5$ km/h for graph-read tolerance).

Question 8 **(9 marks)**

(a) **M1** Identifies the two missing horizontal edges at the "shoulders" of the T: each $(9-3)\div 2 = 3$ m (or recognises the bottom width is split $3+3+3=9$).

M1 Sums all eight sides: $9+2+3+3+3+3+3+2$ (oe; total horizontals $2\times 9 = 18$, total verticals $2\times 2 + 2\times 3 = 10$).

A1 $=$ **28** m (cao).

(b) **M1** Splits the T-shape into two rectangles: e.g. bottom strip 9×2 and upper block 3×3.

M1 Calculates first part: $9\times 2 = 18$.

M1 Calculates second part: $3\times 3 = 9$.

A1 Total area $= 18+9 =$ **27** m^2 (cao).

(c) **M1** 27×32 (ft from (b)).

A1 $=$ £**864·00** (cao). Accept £864.

Question 9 (9 marks)

(a) **M1** Recognises scale: 1 cm on map $= 50$ m in reality.

M1 5×50 (oe).

A1 $=$ **250** m (cao).

(b) **M1** Identifies S is directly south of L (or measures angle from north line at L).

M1 Recognises bearing measured clockwise from north.

A1 **180**° (cao). Bearing must be written as a three-figure value.

(c) **M1** Converts 100 m to map distance: $100\div 50 = 2$ cm.

M1 Identifies bearing 090° from S means due east of S (or angle 90° clockwise from north).

A1 Cross plotted 2 cm to the east of S (i.e. at the point $(9,2)$ on the map grid) and labelled **C** (tolerance ± 2 mm and ± 2°).

Total: $5+8+6+6+8+6+8+9+9 =$ **65** *marks.*