2008 Mathematics SG – Credit Level – Paper 1

Marking Instructions

Award marks in whole numbers only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1	**Ans: 5.8** • knowing correct order of operations • carrying out both calculations	• must involve a multiplication followed by a subtraction • 5.8 **2KU**

Notes:

(i) for 5.8, with or without working — award $\frac{2}{2}$

(ii) for 722.1, with or without working — award $\frac{1}{2}$

(iii) for 18.4 $(24.7 - 0.63 \times 10)$, with or without working — award $\frac{1}{2}$

(iv) for 22.81 $(24.7 - 0.63 \times 3)$, with or without working — award $\frac{1}{2}$

(v) for 740.37 $(24.7 \times 30 - 0.63)$, **with** working — award $\frac{1}{2}$

(vi) for a **final** answer of 18.9 — award $\frac{0}{2}$

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
2	**Ans:** $\mathbf{5(x-3)(x+3)}$ • beginning to factorise • factorised fully	• $5(x^2-9)$ • $5(x-3)(x+3)$ **2KU**
Notes: (i) the 1st mark is available for $5(x^2-9)$ or $(5x-15)(x+3)$ or $(x-3)(5x+15)$ (ii) All 3 factors must be shown together to obtain the 2nd mark		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	**Ans:** $\boldsymbol{H = \sqrt{\frac{W}{B}}}$ • beginning to rearrange • completed rearrangement	 • $H^2 = \frac{W}{B}$ • $H = \sqrt{\frac{W}{B}}$ **2KU**

Notes:

(i) for $H = \sqrt{\frac{W}{B}}$, with or without working — award $\frac{2}{2}$

(ii) for $H = \frac{\sqrt{W}}{B}$, with or without working — award $\frac{1}{2}$

(iii) the 2nd mark is for the square root of the candidate's expression for H^2

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4	**Ans:** $y = -2x + 18$ • gradient • y-intercept • linear equation	 • -2 • 18 • $y = -2x + 18$ **3KU**

Notes:

(i) for $y = -2x + 18$, with or without working — award $\frac{3}{3}$

(ii) for $y = -2x + c$, with or without working — award $\frac{1}{3}$

(iii) for $y = mx + 18$, with or without working — award $\frac{1}{3}$

(iv) for an incorrect equation, the 3rd mark can be awarded only if both gradient **and** y-intercept are consistent with stated values

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5	**Ans:** $\dfrac{\boldsymbol{3p+5}}{\boldsymbol{p(p+5)}}$ • common denominator • simplified numerator	• $\dfrac{\ldots}{p(p+5)}$ or $\dfrac{\ldots}{p^2+5p}$ • $\dfrac{3p+5}{\ldots}$ **2KU**
Notes: (i) for wrong simplification beyond the correct answer award $\frac{1}{2}$		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6 (a)	**Ans:** $\mathbf{2(x+8)}$ • expression	• $2(x+8)$ **1KU**
(b)	**Ans:** $\mathbf{0.5x}$ • expression	• $0.5x$ **1KU**
(c)	**Ans:** **12 kilometres per hour** • equating the two distances • collecting like terms • solution	• $2(x+8)+0.5x=46$ • $2.5x=30$ • $x=12$ **3RE**
Notes: (i) for answer of 12 km/h **without** working		award $\frac{1}{3}$

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7 (a)	**Ans: 5** • value	• 5 **1KU**
(b)	**Ans: $x+6$** • expression	• $x+6$ **1RE**
(c)	**Ans: $7x+7$** • dealing with mean • find term	• $\frac{-2x+(x+5)+3^{\text{rd}}\text{ term}}{3}=2x+4$ • $7x+7$ **2RE**
Notes: (i) for $7x+7$, with or without working, award $\frac{2}{2}$		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8 (a)	**Ans:** $(2,\ 0),\ (8,\ 0)$ • coordinates of Q • coordinates of R	 • $(2, 0)$ • $(8, 0)$ **2KU**
Notes: (i) for 2 **and** 8 — award $\frac{1}{2}$ (ii) for $(0, 2)$ **and** $(0, 8)$ — award $\frac{1}{2}$		
(b)	**Ans: 25 units** • axis of symmetry • finding height above x axis • solution	 • $x = 5$ • $y = 9$ • 25 units **3RE**
Notes: (i) for a final answer of 25, with or without working — award $\frac{3}{3}$ (ii) for a final answer of 9, with or without working — award $\frac{2}{3}$		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9	**Ans:** $m^{\frac{7}{2}}$ • correct index • solution	• $m^{\frac{1}{2}}$ • $m^{\frac{7}{2}}$ **2KU**
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10 (a)	**Ans:** $(0, 1)$ • coordinates of C	• $(0,1)$ **1KU**
Notes: (i) accept an answer of $(y =)1$		
(b)	**Ans:** $a = 4$ • method • processing	• $16 = a^2$ • $a = 4$ **2KU**
Notes: (i) for $a = 4$, with or without working award $\frac{2}{2}$		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
11	**Ans:** $\mathbf{3\sqrt{2}}$ • method • solution • simplification of a surd	 • $AC^2 + \left(\sqrt{32}\right)^2 = \left(\sqrt{50}\right)^2$ • $\sqrt{18}$ • $3\sqrt{2}$ **3KU**

Notes:

(i) for a final answer of $\sqrt{82}$ with working award $\frac{1}{3}$

(ii) the 3rd mark is available for the simplification of $\sqrt{18}$, $\sqrt{32}$ or $\sqrt{50}$

(iii) $\sqrt{18}$ without working cannot be awarded the first 2 marks