Mark scheme

Speed, density and pressure

Mathematics 0580 · Questions from Paper 1, Paper 2, Paper 3 and Pape…

Total marks

36

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
2	2	2	3	3	3	3	4	6	8	**36**

Question 1 **[2]**

1	90	**2**	**M1** for 135 ÷ *their* time

Question 2 **[2]**

2	34.2	**2**	**M1** for figs 342 or for $k \times 60 \times 60$ or for $k \div 1000$

Question 3 **[2]**

3	16.5	**2**	**M1** for $\frac{55}{60}$ or speed × time (numerical)

Question 4 **[3]**

4	72	**3**	**M2** for $\frac{1280}{64} \times \frac{60 \times 60}{1000}$ **M1** for working out distance ÷ speed e.g. figs 1280 ÷ 64 or figs $\frac{1280}{\textit{their speed}}$ or for working out km/h to m/s conversion e.g. $64 \times \frac{1000}{60 \times 60}$ oe or *their* $\left(\frac{1280}{64}\right) \times \frac{60 \times 60}{1000}$ oe

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Question 5 **[3]**

5	1.38 or 1.381 to 1.382	**3**	**M2** for $(36 + 4.3) \div (105 \times \frac{1000}{60 \times 60})$ oe or **M1** for $105 \times \frac{1000}{60 \times 60}$ or for a distance ÷ a speed or **SC2** for answer 1.23(4...)

Question 6 **[3]**

6	4.32	**3**	**B1** for $\frac{1}{4}$ oe or $\frac{2}{4.5}$ oe seen **M1 dep** on **B1** for $\frac{1+2}{their\frac{1}{4} + their\frac{2}{4.5}}$ oe

Question 7 **[3]**

7	1004.64	**3**	**M1** for $2 \times 4 \times 6.5$ oe implied by 52 **M1 f**or $19.32 = \frac{[mass]}{their\,52}$ or better

Question 8 **[4]**

8	75	**4**	**B3** for 55 or **B2** for 110 or **B1** for 20 seen OR **M1** for $\frac{30}{60} \times 40$ or better seen **M1dep** for $130 - their\,20$ **M1dep** for $\frac{their 110}{2}$ OR **M1** for $130 \div 40$ or better seen **M1** for *their* $3.25 - 0.50$ **M1** for *their* $\frac{2.75}{2} \times 40$

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Question 9 **[6]**

9(a)	25.2	**2**	**M1** for 420 ÷ 1000 × 60 or **B1** for figs 252 final answer
9(b)	21.7 or 21.70…..	**4**	**B2** for 2 h 21 [min] or 2°21° or 2.35 [h] or 141 [min] or **B1** for 2 h 46 [min] or 2°46° or 2.76… [h] or 2.77[h] or 166 [min] or 1416 or 1220 **M1** for 51 ÷ *their* time period

Question 10 **[8]**

10(a)	24	**2**	**M1** for $\frac{100 \text{ or } 0.1}{\text{time}}$ or **B1** for figs 24
10(b)	8.32 or 8.319 to 8.320	**3**	**M1** for $9.5 \times \frac{45}{60}$ oe **M1** for $\frac{8.1}{7.5}$
10(c)	$\frac{18(p+q)}{5v}$ oe final answer	**3**	**M1** for [$k \times$] $\frac{(p+q)}{v}$ for some $k \neq 0$ **M1** for $v \times \frac{1000}{3600}$ oe soi

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