

**MARK SCHEME for the October/November 2010 question paper
for the guidance of teachers**

0581 MATHEMATICS

0581/13

Paper 1 (Core), maximum raw mark 56

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Abbreviations

- cao correct answer only
- cso correct solution only
- dep dependent
- ft follow through after error
- isw ignore subsequent working
- oe or equivalent
- SC Special Case
- www without wrong working

Qu.	Answers	Mark	Part Marks
1	Pyramid	1	
2	1, 4, 25, 100	2	B1 for any two and none incorrect. -1 each incorrect
3	(a) 2 (b) 2	1 1	
4	(a) 41 or -41 (b) -7	1 1	
5	$2x^2 + xy$ final answer	2	B1 for $2x^2$ or xy seen in working
6	5.5	2	M1 for $2x + 1 = 3 \times 4$ or better or $\frac{2x}{3} = 4 - \frac{1}{3}$
7	6.489	2	B1 for 6.5 or 6.49 or 6.4891....
8	35	2	M1 for $45 \div (7 + 2)$ SC1 for answer = 10
9	46.4	2	M1 for 32×1.45 oe or B1 for answer of 14.4
10	$\frac{3}{16}$	2	B1 for $\frac{1875}{10000}$ or any equivalent fraction.
11	$3a(c - 2d)$	2	B1 for $a(3c - 6d)$ or $3(ac - 2ad)$ or $3a(jc - kd)$ where j and k are non-zero.
12	$\frac{8}{27}$	2	M1 for $1 \div (1\frac{1}{2})^3$ oe or SC1 for $\frac{27}{8}$
13	$(x =) 2, (y =) -1$	2	M1 for correct method for eliminating one variable. Subtract or multiply by 3 and 5, then subtract

14	(a) 17	1	
	(b) $\sqrt{17}$ or 4.12(...)	1	
	(c) 0.294	1	
15	212.18 final answer cao	3	M2 for 200×1.03^2 oe or M1 for $(200 \times 1.03) \times 0.03$ oe
16	(a) 90	1	
	(b) 45	1ft	ft $\frac{1}{2}$ (180 – their (a))
	(c) 45	1ft	ft 90 – their (b)
17	(a) $(7 + 2) \times 9$	1	
	(b) $36 \div (6 \div 2) = 12$	1	
	(c) $5 \times (3 + 6) \times 2 = 90$	1	
18	(a) (i) $\begin{pmatrix} 4 \\ 5 \end{pmatrix}$	1	
	(ii) $\begin{pmatrix} 2 \\ -2 \end{pmatrix}$	1	
	(b) $(AC) + (CB) = (AB)$	1	
19	$(y =) -\frac{1}{3}x + 2$ cao	3	B1 for gradient of $\pm\frac{1}{3}$ oe (Allow ± 0.33 or better) B1 ind for $mx + 2$ where $m \neq 0$.
20	(a) (i) 4	1	
	(ii) $\frac{4}{5}$ oe	1	
	(iii) $\frac{2}{5}$ oe	1	
	(b) $\frac{2}{4}$ oe	1	
21	(Mode =) 0	1	
	(Median =) 2	1	
	(Mean =) 2.7	2	M1 $(0 + 0 + 0) + 1 + 2 + 2 + 4 + 4 + 5 + 9$

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22	<p>(a) Lines connecting (08 00, home) to (08 10, shop)</p> <p>(their 08 10, shop) to (their 08 15, shop)</p> <p>(their 08 15, shop) to (08 30, school)</p> <p>(b) 1.65</p>	3	<p>B1 home to shop</p> <p>B1ft horizontal and 5 minute period</p> <p>B1ft for line to 08 30 and school</p>
		2	<p>M1 for use of speed × time</p> <p>SC1 for 1.375 or 1.376 to 1.38</p>