



## Free Standing Mathematics Qualification

# Calculating Finances 6984/2

## Mark Scheme

### *2005 examination – June series*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

**Free-Standing Mathematics Qualification**  
**6984 /2 Calculating Finances**  
**June 2005**

**Question 1**

	A	B	C	D	E
1		<b>Cost in Manchester</b>	<b>Cost in London</b>	<b>Saving in Manchester</b>	<b>Saving as a percentage of London costs</b>
2	One hour at city centre parking meter	£1.50	£3.00	£1.50	50 %
3	Cinema ticket	£5	£8.90	£3.90	44 %
4	Takeaway fish and chips	£2.10	£3.50	£1.40	40 %
5	Garage carwash	£3.50	£5	£1.50	30 %
6	One hour at easyInternet Cafe	£1.50	£1.70	20p	12 %

1 (a)	Column D	B1	Condone 1.5 for 1.50 etc
	Any in Column E	M1A1	Condone 1 omission of dp.
	Others in Column E	B1	Must be 20p or 0.2
	Nearest integer	B1	At least 2 correct.
(b)	$\frac{D4}{C4} \times 100\%$	B1	or $\frac{C4 - B4}{C4} \times 100\%$
(c)	Reduction is $\frac{45}{100} \times £67$	M1	OR Cost is $\frac{55}{100} \times £67$ M1
	= £30.15	A1	= £36.85 A2
	∴ cost is £36.85	A1	
(d)	Only some items are given	B1	Oe The statement is true as a good range of services is given.
	<b>TOTAL</b>	<b>10</b>	

**Question 2**

2	$2 : 3 \Rightarrow 5 \text{ parts}$ Cost is $\frac{2}{5} \times £40$ $= £16$	B1 M1 A1	SC2 £16 and £24 given or £24
	<b>TOTAL</b>	<b>3</b>	

**Question 3**

3 (a)	£249.46	B1	Seen in working space or answer  ft working must be shown Accept 12.26 or 12.3 % condone 12.25%
(b)	Total cost is $£249.46 \times 36$ $= £8980.56$ $\therefore$ Interest is £980.56	M1 A1ft A1	
(c)	$\% = \frac{980.56}{8000} \times 100$ $= 12.257 \%$	M1 A1	
(d)	Annual flat rate is $\frac{12.257}{3}$ $= 4.085..$ 7.9% is approximately $2 \times 4.085..$	M1 A1 B1	
	<b>TOTAL</b>	<b>9</b>	

**Question 4**

4 (a)	Europe	B1	Allow $46^\circ - 50^\circ$ Accept $\frac{48}{360} \times 6$ Accept 766 – 834 million [ft from angle]
(b)	Angle is $48^\circ$ Profit is $\frac{48}{360} \times 6\,000\,000\,000$ $= £800 \text{ million}$	B1 M1 A1	
	<b>TOTAL</b>	<b>4</b>	

**Question 5**

5 (a)	Annual pay is $\pounds 3025 \times 12$ = $\pounds 36300$ Taxable income = $\pounds 36300 - \pounds 4745$ = $\pounds 31555$	B1 M1 A1	
(b)	Tax paid is 10% of $\pounds 2020$ + 22% of $\pounds 29\,380$ + 40% of $\pounds 155$ = $\pounds 202 + \pounds 6463.60 + \pounds 62$ = $\pounds 6727.60$	M1 B1 A1 A1 A1	At least 2 correct multiples  $\pounds 155$ Any 2 correct Third correct ft if MR in (a) or MC
	<b>TOTAL</b>	<b>8</b>	

**Question 6**

6	Pays NI on $\pounds 225 - \pounds 89$ per week	M1	
	= $\pounds 136$	A1	
	$\therefore$ NI is 11% of $\pounds 136$	M1 dep	
	= $\pounds 14.96$	A1	
	<b>TOTAL</b>	<b>4</b>	

**Question 7**

7	1999-2000 Graph is steepest	B1 B1	
	<b>TOTAL</b>	<b>2</b>	

**Question 8**

8	12.6 million = 107% of 2001 $\therefore$ 2001 number is $\frac{12.6}{107} \times 100$ 11.7757 million or 11.8 million	M1 M1 A1	Quoted and used  or 11.776 million or 11.78 million
	<b>TOTAL</b>	<b>3</b>	

**Question 9**

9	Normal price is $1.75 \times$ cost price		OR Normal price is $1.75 \times$ cost price
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Reduction is $1.75 \times 0.3 \times \text{cost price}$ $= 0.525$	M1	Sale price is $0.7 \times 1.75 \times \text{cost price}$ M1 $= 1.225 \times \text{cost price}$ A1
$\therefore$ Sale price is $1.75 - 0.525$ $= 1.225 \times \text{cost price}$	A1	Profit = $0.225 \times \text{cost price}$ A1 % profit is 22.5 % A1
Profit is $0.225 \times \text{cost price}$	A1	
$\therefore$ % profit is 22.5 %	A1	NB do not accept $75 \times 0.3 = 22.5\%$
<b>TOTAL</b>	<b>4</b>	

**Question 10**

10	$R = \sqrt[3]{\frac{5900}{4500}} - 1$ $= \sqrt[3]{1.31111} - 1$ $= 1.09449 - 1$ $R = 9.449\%$	M1  B1 A1	Do not accept $\frac{\sqrt[3]{5900}}{4500} - 1$  1.09449 accept 1.094 Accept 9.45% or 9.4% with working Truncated 1.31 $\Rightarrow$ 9.418 or 9.42 SC2
	<b>TOTAL</b>	<b>3</b>	
	<b>TOTAL FOR PAPER</b>	<b>50</b>	