

Percentages

Mark Scheme

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Topic	Number and Algebra
Sub Topic	Percentages
Booklet	Mark Scheme

Time Allowed: 61 minutes

Score: /51

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	70%	60%	55%	50%	<50%

Question Number	Working	Answer	Mark	Notes
1.	eg $\frac{5}{100} \times 8000 = 400$	OR 8000×1.05^3	3	M1 for eg $\frac{5}{100} \times 8000$ or 400
	$\frac{5}{100} \times (8000 + "400")$ = 420 $\frac{5}{100} \times (8000 + "400" + "420")$ = 441 8000 + "400" + "420" + "441"			M1 for completing method
				OR M2 for 8000×1.05^3 (M1 for 8000×1.05 or 8400 or 8000×1.05^2 or 8000×1.05^4)
				Accept (1 + 0.05) as equivalent to 1.05 throughout.
				SC If no other marks gained, award M1 for 8000×1.15 oe or 9200
		9261		A1 Cao
				Total 3 marks

Question	Worki	Answer	Mark	Notes
2.	$15/100 \times 640 (=96)$ 640 – "96"	544	3	M1 M1 dep or M2 for 640×0.85 A1
				Total 3 marks

Question	Answer	Mark	Notes
3. (a)	$7/32 \times 100$ oe 21.9	2	M1 A1 (21.875) accept awrt to 21.9
(b)	$4/100 \times 32 (=1.28)$ or $4/100 \times 3200000 (=1280000)$ $32 + "1.28"$ or $3200000 + "1280000"$ 33	3	M1 M1 (dep) A1 M2 for 32×1.04 oe or 3200000×1.04 oe (33.28) accept 33.3, 33000000, 33300000, 33280000
			Total 5 marks

4.	$\frac{6}{100} \times 7500 (=450)$ {Ist Year} or $1.06 \times 7500 (=7950)$ “450” + “477” + “505.62”	1432.62	3	M1 M2 for $1.06^3 \times 7500 (=8932.62)$ M1 Calculating 6% of previous capital for another 2 years. A1 M1A0 for 1350 or 8850
				Total 3 marks

5.	(a)	$\frac{1639}{3440} \times 100$	2	M1 for $\frac{1639}{3440}$ or 0.476...
		47.6		A1 for ans rounding to 47.6
	(b)	$\frac{3440}{1.376}$ or $3440 \times \frac{100}{137.6}$ oe	3	M2 for $\frac{3440}{1.376}$ or $3440 \times \frac{100}{137.6}$ oe M1 for $\frac{3440}{137.6}$ or $137.6\% = 3440$ or $\frac{3440}{x} = 1.376$ or $3440 = 1.376x$ or 25 seen
		2500		A1 cao
				Total 5 marks

6.	1.2×1.17 or $\frac{120}{100} \times \frac{117}{100}$ or 1.404 oe or 140.4	40.4	3	M2 M1 for 1.2 or $\frac{120}{100}$ or 1.17 or $\frac{117}{100}$
				A1 Also award for 40 if M2 scored
				Total 3 marks

7. (a)	45/625 x 100		7.2	2	M1 A1	
7. (b)	8/100 x 45 (= 3.6) 45 + “3.6”		48.6(0)	3	M1 M1 dep A1	or M2 for 45 x 1.08
7. (c)	640 – 625 (= 15) “15” / 625 or “15” / 640		2.4	3	M1 M1 dep A1	640/625 (= 1.024) “1.024” – 1 (= 0.024) 625/640 (= 0.976.. or 0.977) 1 – “0.976” (= 0.0234)
7. (d)	18 ÷ 1 1/3 or 18 ÷ 1.33 (2dp or better) or 18 ÷ 80 x 60		13.5	3	M2 A1 cao	M1 for 1 1/3 or 18 ÷ 1.2 (=15) or 18 ÷ 1.3 (13.8..) or 18 ÷ 80 (=0.225)
						Total 11 marks

8.	$\frac{1}{1.25}$ oe eg $\frac{1}{5}, \frac{4}{5}, 0.8(0), \frac{100}{125}, 80\%$, $t_1 = \frac{d}{s}$ and $t_2 = \frac{d}{(1+0.25)s}$ or $\frac{t_1}{t_2} = 0.8$		3	M1	Alternative method (assigns values to distance and average speed) M1 for calculating both times correctly M1 (dep) for finding <u>Mon time - Tues time</u> Mon time
	1 – 0.8 oe eg $1 - \frac{4}{5}, 100\% - 80\%$			M1	
		20		A1	cao
Total 3 marks					

9. (a)	$\frac{8}{100} \times 475$ oe or 38 or 437		3	M1	M2 for 475×1.08 oe
	475 + "38"			M1 (dep)	
		513		A1	cao
(b)	1% = $\frac{48}{8}$ or 6 8% (of amount) = 48		3	M1	M2 for $\frac{48}{8} \times 100$ or 600 or $\frac{48}{0.08}$
	"6" $\times 100$ or 600			M1	or $\frac{48}{8} \times 108$ or $\frac{48}{0.08} \times 1.08$
		648		A1	cao (NB: An answer of 600 scores M2A0)
Total 6 marks					

10. (a)(i)	$\frac{15}{100} \times 280$ or 42		3	M1	M2 for $\frac{85}{100} \times 280$
	280 – "42"			M1 dep	
		238		A1	cao
(ii)	$\frac{24}{0.15}$ or $24 \times \frac{100}{15}$		3	M2	for $\frac{24}{0.15}$ or $24 \times \frac{100}{15}$ M1 for $\frac{24}{15}$ or 1.6
		160		A1	cao
(b)	2 + 3 or 5		3	M1	5 may be denominator of a fraction or coefficient in an equation such as $5x = 320$
	$\frac{320}{5}$ or $320 \div 5$ or 64 or $\frac{7}{5}$ oe			M1	dep
		448		A1	Also award for 128 : 192 : 448
Total 9 marks					