REVISE
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1.07 — AER — comparing savings products

Mark schemes for the 1.07 question pack

Spec 1.8.4 — Unit 1

SOLUTIONS · 2025 SPECIFICATION

Mark schemes for the 5 questions in the corresponding revise.wales question pack (36 marks total). Sources: legacy WJEC GCSE papers, WJEC SAM, and custom-authored mark schemes. Pack layout © revise.wales.

7(a) $\frac{14}{2800}(\times 100)$ ×12 OR $\frac{14.07}{2814}(\times 100)$ ×12	M2	M1 for $\frac{14}{2800}(\times 100)$ OR $\frac{14.07}{2814}(\times 100)$ Or M1 for 0·005 or 0·5%
= 6(%) or 0·06	A1	A0 for 0·06%
7(b) $(1+\frac{0\cdot06}{12})^{12}-1$ or equivalent	M1	FT their final answer from (a)
= 6·17 (%)	A2	A1 for 0·061(67…) or 0·062, OR A1 for 6·1(67…%) or 6·2(%) *Alternative methods:* *M1 for 2800 × 1·005^{12}* *M1 for* $\frac{2972.69(7873)-2800}{2800}(\times 100)$ *or equivalent* *FT 'their 2972.69(7873) provided previous M1 awarded.* *A1 for 6·17 (%), OR* *M1 for* $(1+\frac{0\cdot06015}{6})^{6}-1$ *A2 for 6·17 (%)* *A1 for 0·06(167…), or for a correct percentage but not correct to 2 dp.*

		equations shown.
9.(a) Tan ACB = $\frac{6{\cdot}5}{10{\cdot}4}$ (ACB =) $\tan^{-1}$ 0·625 or $\tan^{-1}$ (6·5 / 10·4) (x) = 32(°)	M1 A1 A1	M1 for equivalent complete method. C.A.O. (Implies previous A1.) Accept an answer that rounds to 32(°)
Alternative method. ***Correct** use of 'two-step' method.* *(x) = 32(°)*	 M2 A1	 *A partial trigonometric method is M0.* *Accept an answer that rounds to 32(°)*
9.(b) (DE =) 9·4 × sin[22 + 32](°) = 7·6(…)(cm) ISW	M2 A1	FT 22° + 'their 32°'. M0 for using sin22° or sin 'their 32°' alone. M1 for $\frac{DE}{9{\cdot}4}$ = sin54(°) If no marks awarded SC1 for a correct answer (1dp) using their clearly stated or shown angle (D)C(E), but not 22° or 'their 32°'.
Alternative method. ***Correct** use of 'two-step' method.*	 M2	 *A partial trigonometric method is M0.*

8(a) Use of 2 as a denominator and power in the AER formula (AER =) $(1 + 0{\cdot}04/2)^2 - 1$ Method to calculate $1{\cdot}02^2$ = 0·0404 = 4·04 %	B1 M1 m1 A1 A1	 For a correct method seen, not for accuracy 1·02 × 1·02 = 1·04 is not sufficient to award this m1 mark FT from B1M1m1A0 provided their percentage is greater than 4%
Alternative method: *Intention to increase a sum of money by 2%* *Correct method to increase a sum of money by 2% twice* *increase (× 100 %)* *original* *= 0·0404* *= 4·04 %*	*B1* *M1* *M1* *A1* *A1*	*(e.g. (£)1020)* *(e.g. (£)1040.40)* *If a candidate uses new amount (× 100%)* *original* *do not award M1 unless they then show the intention to subtract 1 (or 100%)* *FT from B1M1m1A0 provided their percentage is greater than 4%*
8(b) Explanation e.g. 'So that customers can compare accounts', or 'So that customers (or banks) can compare interest rates accurately', or 'Customers (or banks) can easily work out how much they will have after a year', or 'To calculate (or show) how much interest they offer per year'	E1	Allow e.g. 'It's a higher rate than the nominal annual rate (to make it more attractive)'
8(c) 3000 × 1·0404 OR 3000 × 1·02 × 1·02 = (£) 3121.2(0) (£) 78.8(0)	M2 A1 B1	FT their AER from part (a) provided of equivalent difficulty M1 for 3000 × 1·02 or equivalent FT from M2 FT provided M2 awarded AND 'their (£) 3121.2(0)' is < (£) 3200 If no marks awarded, and an integer AER derived in (a), then SC1 for 3000 × 'their 1·0404' SC2 for the correct evaluated difference between 3200 and 3000 × 'their 1·0404'

6(a)		For all the amounts of money shown below, accept other reasonable approximations e.g. nearest 10p, rounded or truncated Only allow a misread of the amount deposited, not of the nominal annual rate
$335\left(\frac{\left(\left(1+\frac{5.4/100}{12}\right)^{n}-1\right)\left(1+\frac{5.4/100}{12}\right)}{\frac{5.4/100}{12}}\right)$ or $335\left(\frac{((1+0.0045)^{n}-1)(1+0.0045)}{0.0045}\right)$	B1	For any value of n
$335\left(\frac{\left(\left(1+\frac{5.4/100}{12}\right)^{28}-1\right)\left(1+\frac{5.4/100}{12}\right)}{\frac{5.4}{12\times 100}}\right)$ or $335\left(\frac{((1+0.0045)^{28}-1)(1+0.0045)}{0.0045}\right)$	M1	OR $335\left(\frac{\left(\left(1+\frac{5.4/100}{12}\right)^{n}-1\right)\left(1+\frac{5.4/100}{12}\right)}{\frac{5.4/100}{12}}\right)$ = 10000 (or ≥ 10000) May be implied by amounts of (£)9259.52(1991) for n=26 AND (£)9637.69(734) for n=27
= (£) 10017(.57…) or (£) 10018	A1	Or evidence that n = 28 An answer of 28 months with no incorrect work seen can be awarded B1M1A1 and possible final A1
(Date when Rebecca has £10000) November 2024	A1	CAO If first B1 only awarded, SC1 for a correct evaluation of the formula for any value of n from 20 to 30 • n=20 leads to (£)7025(.78…) or (£)7026 • n=21 leads to (£)7393(.906…) or (£)7394 • n=22 leads to (£)7763(.686..) or (£)7764 • n=23 leads to (£)8135(.13…) • n=24 leads to (£)8508(.246…) • n=25 leads to (£)8883(.04…) • n=26 leads to (£)9259(.52…) or (£)9260 • n=27 leads to (£)9637(.697…) or (£)9638 • n=29 leads to (£)10399(.16…) • n=30 leads to (£)10782(.46…) If no marks awarded and from using a rate of $^{5.4}/_{12}$ = 0.45, SC2 for (£)13467(.65…) or (£)13468 AND Feb 2023 from $335\left(\frac{((1+0.45)^{7}-1)(1+0.45)}{0.45}\right)$, or SC1 for (£)13467(.65) or (£)13468 If no marks awarded and from using a rate of 0.045, SC2 for (£)10174(.426…) AND February 2024 from $335\left(\frac{((1+0.045)^{19}-1)(1+0.045)}{0.045}\right)$, or SC1 for (£)10174(.426...) If no marks awarded and from using a rate of 0.054, SC2 for (£)10312(.178…) AND January 2024 from $335\left(\frac{((1+0.054)^{18}-1)(1+0.054)}{0.054}\right)$, or SC1 for (£)10312(.178…)
6(b) (AER =) $\left(1+\frac{5.4/100}{12}\right)^{12}-1$ or equivalent = 5.54(%)	M1 A1	Sight of an answer of 5.53(5675…%) is awarded M1A0

6(c)	£ 236.84	B1	

7(a) (AER =) $(1 + 0.0026)^{12} - 1$ or equivalent = 3.16(500…) or 3.17 or 3.2 (%)	M1 A1	e.g. $\left(1 + \frac{12 \times 0.0026}{12}\right)^{12} - 1$ or $\left(1 + \frac{0.0312}{12}\right)^{12} - 1$
7(b) $AER = \left(1 + \frac{2.48 \div 100}{4}\right)^{4} - 1 =$ (= 0.025(03…) or 2.5(03…) (%)) (Amount in account after 10 years =) 3000 × (1 + 0.025(03…))^{10} = (£)3841.43(752…) or (£)3841.44 (Percentage increase =) $\frac{3841.43(752…) - 3000}{3000}$ (×100) or $\frac{3841.43(752…)}{3000} - 1$ (×100) = 28(.04) to 28.05 (%)	M1 M1 A1 M1 A1	The −1 may be implied in further working FT 'their derived 0.025(03…)' provided it comes from the AER formula with $1 < n \leq 12$ CAO. Must come from M1M1 Accept (£)3840.25 from the use of the multiplier 1.025 provided M1M1 previously awarded FT 'their 3841.43(752…)' provided at least one M1 previously awarded An amount in the account after 10 years of (£)3840.25 leads to 28(.008) (%) If no marks awarded, SC1 for an answer of 27.7(58…) or 27.8% from use of $\frac{3000 \times (1.0248)^{10} - 3000}{3000} \times 100$ or $((1.0248)^{10} - 1) \times 100$ or equivalent
7(b) Alternative method 1: *(Quarterly rate =) $\frac{2.48}{4}$ (%) or $\frac{2.48 \div 100}{4}$* *(= 0.62(%) or 0.0062)* *(Amount in account after 10 years =)* *3000 × $\left(1 + \frac{2.48 \div 100}{4}\right)^{10 \times 4}$ or 3000 × 1.0062^{40}* *= (£)3841.43(752…) or (£)3841.44* *(Percentage increase =)* *$\frac{3841.43(752…) - 3000}{3000}$ (×100)* *or $\frac{3841.43(752…)}{3000} - 1$ (×100)* *= 28(.04) to 28.05 (%)*	*M1* *M1* *A1* *M1* *A1*	*May be implied in further working* *FT 'their 0.0062' provided it comes from 2.48(÷100) /n provided $1 < n \leq 12$* *Allow 3000 × $\left(1 + \frac{2.48 \div 100}{n}\right)^{10 \times n}$ provided their value of n has been used consistently and $1 < n \leq 12$* *CAO. Must come from M1M1* *FT 'their 3841.43(752…)' provided at least one M1 previously awarded*

7(b) Alternative method 2: $AER = \left(1 + \frac{2.48 \div 100}{4}\right)^4 - 1 =$ (= 0.025(03…) or 2.5(03…) (%))	M1	The −1 may be implied in further working
(Percentage increase =) $(1 + 0.025(03…))^{10} - 1$	M3	FT 'their 0.025(03…)' provided it comes from $\left(1 + \frac{2.48 \div 100}{n}\right)^n - 1$ where n has been used consistently and $1 < n \leq 12$ M2 for $(1 + 0.025(03…))^{10}$
= 28(.04) to 28.05 (%)	A1	CAO. Must come from M1M3
7(b) Alternative method 3: (Quarterly rate =) $\frac{2.48}{4}$ (%) or $\frac{2.48 \div 100}{4}$ (= 0.62(%) or 0.0062)	M1	
(Percentage increase =) $(1 + 0.0062)^{10\times4} - 1$	M3	FT 'their 0.0062' provided it comes from 2.48(÷100) /n provided $1 < n \leq 12$ Allow $\left(1 + \frac{2.48 \div 100}{n}\right)^{10\times n} - 1$ provided their value of n has been used consistently and $1 < n \leq 12$ M2 for $(1 + 0.0062)^{10\times4}$
= 28(.04) to 28.05 (%)	A1	CAO

End of solutions