Q1. (2017)

24(a)	$\frac{7}{2}$	B1	oe improper fraction eg $\frac{14}{4}$
	Additional Guidance		
	Condone ± on numerator and/or denominator		

Q2. (2018)

1	40	B1	

Q3. (2018)

6	$\frac{1.86}{1.6(0)}$	M1	oe $\frac{0.93}{0.8(0)}$ or $1\frac{0.26}{1.6}$
	$\frac{186}{160}$ or $1\frac{26}{160}$	A1	oe with no decimal values
	$\frac{93}{80}$ or $1\frac{13}{80}$	B1ft	ft correct simplification of their fraction using the digits 186 and 16(0) ignore incorrect conversion from $\frac{93}{80}$ to a mixed number
	Additional Guidance		
	Cannot score B1ft from an incorrect mixed number		
	$\frac{160}{186} = \frac{80}{93}$		M0A0B1ft
	$\frac{80}{93}$ implies B1ft		M0A0B1ft
	$\frac{93}{80} = 1\frac{3}{80}$ (incorrect conversion to mixed number)		M1A1B1
	$\frac{186}{160} = \frac{31}{30}$ (incorrect simplification of fraction)		M1A1B0
	$\frac{93}{80} = \frac{31}{30}$ (incorrect simplification of fraction)		M1A1B0
	$\frac{93}{80} = \frac{0.93}{0.8}$ (incorrect simplification of fraction)		M1A1B0
	$\frac{186}{16} = \frac{93}{8}$		M0A0B1ft
	$\frac{1.86}{1.6} = \frac{9.3}{8}$		M1A0B0
	$\frac{1.86}{1.6} = \frac{186}{16} = \frac{93}{8}$		M1A0B1ft
	$\frac{1.86}{1.6} = \frac{86}{60} = \frac{43}{30}$ (simplification does not come from 186 and 16(0))		M1A0B0

Q4. (2018)

24(a)	$\frac{1}{16}$	B3	B2 2^{-4} or $\frac{1}{2^4}$ or 4^{-2} or $\frac{1}{4^2}$ or 16^{-1} or 0.5^4 or $\frac{16384}{262144}$ oe fraction B1 2^{18} or $2^5 \div 2^9$ or $(2^2)^{-2}$ or $4^7 \div 4^9$

Q5. (2018)

24(b)	$25 \times 25^{\frac{1}{2}}$ or $(25^{\frac{1}{2}})^3$ or $(25^3)^{\frac{1}{2}}$ or $25\,(\times)\sqrt{25}$ or 25×5 or 5^3 or $\sqrt{25^3}$ or $(\sqrt{25})^3$ or $\sqrt{15\,625}$ or $15\,625^{\frac{1}{2}}$ or $\sqrt{25\times25^2}$ or $\sqrt{25\times625}$	M1	oe condone ± on any $\sqrt{}$
	125	A1	
	Additional Guidance		
	± 125		M1A0

Q6. (2019)

2	$2\frac{7}{9}$	B1	

Q7. (2019)

4	$\frac{37}{8}$	B1	

Q8. (2020)

Q	Answer	Mark	Comments
1	$\frac{19}{4}$	B1	

Q9. (2021)

Question	Answer	Mark	Comments
6	$\frac{7}{5}$ or $1\frac{2}{5}$	B2	B1 28 and 20 or $2\frac{1}{3}$ and $1\frac{2}{3}$ oe mixed numbers or fractions with common denominator or correct unsimplified fraction or mixed number eg $\frac{14}{10}$ or $1\frac{8}{20}$ or correct simplification of a fraction where at least one of the values is 28 or 20 and the other is not 12 SC1 $\frac{5}{7}$
	Additional Guidance		
	Allow a fractional numerator and/or denominator in a correct fraction eg $\frac{2\frac{1}{3}}{1\frac{8}{12}}$ or $\frac{\frac{28}{12}}{\frac{5}{3}}$	B1	
	$\frac{2.4}{1.8}$ simplified to $\frac{4}{3}$	B0	
	Ignore an attempt to convert $\frac{7}{5}$ to an improper fraction eg $\frac{7}{5} = 1\frac{2}{7}$ on the answer line	B2	
	7 : 5 with no working worthy of B1	B0	

Q10. (2021)

Question	Answer	Mark	Comments
22	$1\frac{24}{25}$	B3	oe mixed number B2 $\frac{49}{25}$ B1 $\left(\frac{7}{5}\right)^2$ or $\frac{1}{\left(\frac{5}{7}\right)^2}$ or $\left(\frac{1}{\frac{5}{7}}\right)^2$ or $\frac{1}{\frac{25}{49}}$ or $\left(\frac{25}{49}\right)^{-1}$ or $\frac{1}{5^2} \div \frac{1}{7^2}$
	Additional Guidance		
	For B2 or B1 allow equivalent fractions or decimals eg 1.96 for $\frac{49}{25}$	B2	

Q11. (2022)

Q	Answer	Mark	Comments
2	$\frac{7}{20}$	B1	

Q12. (2022)

Q	Answer	Mark	Comments
6(a)	243	B2	B1 3^{12-7} or 3^5 oe single index or $3 \times 3 \times 3 \times 3 \times 3$ oe multiplication string or 531 441 seen as 3^{12} or as a numerator or 2187 seen as 3^7 or as a denominator or 3^n correctly evaluated, where n is an integer $\geqslant 4$

Additional Guidance	
Condone 3^5 and 243 on the answer line, in either order	B2
3^5 only on the answer line	B1
Do not allow a misread	
12 – 7 is insufficient for B1 unless 3^{12-7} or 3^5 is also seen	
Do not award B1 for a correct evaluation of 3^n not ascribed to a particular value of n eg a list 3, 9, 27, 81 … does not score the mark unless 81 is identified as 3^4	

Q13. (2022)

Q	Answer	Mark	Comments
9(a)	Two fractions less than 1 with product $\frac{3}{10}$	B1	eg $\frac{3}{5}$ and $\frac{1}{2}$ or $\frac{6}{10}$ and $\frac{5}{10}$ either order

Additional Guidance	
Accept negatives if each processed fraction is less than 1	
eg $-\frac{3}{2}$ and $-\frac{1}{5}$	B1
eg $\frac{-1}{-2}$ and $\frac{3}{5}$	B1
eg $\frac{-3}{-2}$ and $\frac{1}{5}$	B0
Do not accept decimals within the fractions eg $\frac{0.6}{1}$ and $\frac{0.5}{1}$	B0
$\frac{11}{10}$ and $\frac{3}{11}$	B0
$\frac{3}{10}$ and $\frac{1}{1}$	B0
0.6 and 0.5	B0

Q14. (2023)

Q	Answer	Mark	Comments
1(b)	$\frac{5}{18}$	B1	oe eg $\frac{10}{36}$

Additional Guidance	
Mark the answer line. If this is blank, mark the working	
Allow 0.277… (minimum two 7s and two dots) or correct notation for recurring decimals	
If values are given in one or more forms, either on the answer line or in working with nothing on the answer line, all values must be correct	
eg1 $\frac{5}{18}$ = 0.277… on answer line	B1
eg2 $\frac{5}{18}$ and 0.518 in working with answer line blank	B0
$1\frac{2}{3}$ / 6 or $\frac{1.66...}{6}$ without answer in correct form	B0

Q15. (2023)

Q	Answer	Mark	Comments
3	$2\frac{1}{4}$	B1	oe mixed number
	Additional Guidance		
	$\frac{9}{4} = 2\frac{1}{4}$ or $2.25 = 2\frac{1}{4}$ on answer line	B1	
	$2\frac{1}{4} = \frac{9}{4}$ or $2\frac{1}{4} = 2.25$ on answer line	B0	
	Otherwise, $2\frac{1}{4}$ and $\frac{9}{4}$ or $2\frac{1}{4}$ and 2.25 on answer line in either order (or in working with answer line blank and answer unclear)	B0	
	$1\frac{5}{4}$	B0	
	$2\left(\frac{1}{4}\right)$ or $2+\frac{1}{4}$	B0	

Q16. (2024)

Q	Answer	Mark	Comments
1	$(12^2 =)\ 144$ or $(\sqrt{36} =)\ 6$ or $(\frac{1}{3} \times \sqrt{36} =) 2$	M1	implied by correct answer accept $(\sqrt{36} =) \pm 6$ or $(\frac{1}{3} \times \sqrt{36} =) \pm 2$
	$(12^2 =)\ 144$ and $(\frac{1}{3} \times \sqrt{36} =) 2$	M1dep	implied by correct answer $144 \times \frac{1}{2}$ or $\frac{432}{6}$ oe fraction implies M1M1 accept $(\frac{1}{3} \times \sqrt{36} =) \pm 2$
	72	A1	accept ± 72 SC2 288
	Additional Guidance		
	-72 only	M1M1A0	
	Condone missing brackets if recovered eg $12^2 \div \frac{1}{3} \times 6$ with answer 72	M1M1A1	
	$\frac{144}{\frac{1}{3} \times 6}$ with no further correct work	M1M0A0	
	Using a decimal for $\frac{1}{3}$ must be recovered		

Q17. (2024)

Q	Answer	Mark	Comments
9	$\frac{26(.0)}{16.4}$	M1	oe eg $\frac{13}{8.2}$ or $1\frac{9.6}{16.4}$
	$\frac{260}{164}$ or $1\frac{96}{164}$	A1	oe with no decimals eg $\frac{130}{82}$ or $\frac{2600}{1640}$ implied by correct answer
	$\frac{65}{41}$ or $1\frac{24}{41}$	B1ft	ft correct simplification of their fraction using the digits 26 and 164 SC2 $\frac{41}{65}$ SC1 $\frac{65}{106}$ (total area as denominator)
	Additional Guidance		
	Ignore units		
	Ignore an incorrect conversion of $\frac{65}{41}$ to a mixed number	M1A1B1	
	$\frac{26(.0)}{16.4} = \frac{2600}{164} = \frac{650}{41}$	M1A0B1ft	