Mark Scheme

Q1.

Question	Working	Answer	Mark	Notes
(a)	$\frac{8}{20}+\frac{5}{20}$	$\frac{13}{20}$	M1	for suitable common denominator with one fraction out of two correct **or** 0.4 + 0.25
			A1	for $\frac{13}{20}$ **or** 0.65 oe
(b)		$\frac{1}{8}$	B1	Accept 0.125

(Q22 1MA1/1F, Nov 2017)

Q2.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	75 to 81	B2	for answer in the range 75 to 81	
		(B1	for 60 **or** 100 **or** 6000 **or** 6400 **or** $\sqrt{64\times100}$)	
(b)	0.000 148	B1	for 0.000 148 oe	Can use standard form
(c)	$\frac{1}{25}$	B1	for $\frac{1}{25}$ or 0.04	

(Q08 1MA1/1H, June 2019)

Q3.

Question	Working	Answer	Notes
(i)		200	B1 cao
(ii)		5.6	B1 For 5.6(2...)

(Q16 1MA1/2H/S2, Specimen papers)

Q4.

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		−27	B1 cao

(Q05 1MA1/1F/S1, Specimen papers)

Q5.

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		7.3225	M1 for 5.5225 or 1.8 A1 cao

(**Q04 1MA1/2F/N, Specimen papers**)

Q6.

Question	Working	Answer	Notes
a		200	B1 200 or 2×10^2
b		3	B1 12 and $\frac{1}{4}$ A1 3 cao
c		−2	M1 $81 = 3^4$ or $\frac{1}{81} = 3^{-4}$ A1 cao

(**Q15 1MA1/1H/S2, Specimen papers**)

Q7.

Question	Working	Answer	Notes
		625	B1 cao

(**Q04 1MA1/2F/S2, Specimen papers**)

Q8.

Paper 1MA1: 3F			
Question	Working	Answer	Notes
(a)		7	B1 cao
(b)		256	B1 cao

(**Q11 1MA1/3F/S1, Specimen papers**)

Q9.

Question	Working	Answer	Notes
a		28	B1
b		1020	B1
c		−8	B1

(Q03 1MA1/1F/S2, Specimen papers)

Q10.

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		27 or 64	B1 cao

(Q03 1MA1/2F/N, Specimen papers)

Q11.

Question		Working	Answer	Mark	Notes
			4.913	1	B1 cao

(Q01 1MA1/2F/M1, Specimen papers)

Q12.

Question	Working	Answer	Notes
(a)		4.6	B1 cao
(b)		4.8025	B1 for 2.7 or 2.1025 (implied by answer of 4.8025) B1 cao

(Q09 1MA1/3F/S2, Specimen papers)

Q13.

Question	Working	Answer	Mark	Notes
(a)		300	B1	for correct use of indices rules, e.g. sight of 3 from $\sqrt[4]{27\times 3}$ or sight of 10^2
			B1	for 300, 3×10^2 oe
(b)		$\frac{25}{9}$	M1	shows understanding of notation by working out one step, e.g. reciprocal or cube root (to both numbers).
			A1	oe

(Q15 1MA1/1H/M2, Specimen papers)

Q14.

Paper 1MA1: 2F			
Question	Working	Answer	Notes
(a)		168	B1
(b)		14.85	M1 for 12.25 or 2.6 A1

(**Q15 1MA1/2F/S1, Specimen papers**)

Q15.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	2.28	B1	cao	
(b)	2.5604	B2	cao	If the correct answer is shown and then rounded, award full marks.
		(B1	for 6.6564 seen, or for 2.56 or for digits 25604)	

(**Q08 1MA1/3F, June 2018**)

Q16.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	3	B1	cao	
(b)	32	B1	cao	
(c)	30 ÷ (3 + 2) – 4	B1	for brackets correctly placed	

(**Q11 1MA1/1F, June 2024**)

Q17.

Question	Working	Answer	Mark	Notes
		16	B1	cao

(**Q02 1MA1/2F/M3, Specimen papers**)

Q18.

Question	Answer	Mark	Mark scheme	Additional guidance
	49	B1	cao	

(**Q05 1MA1/1F, Nov 2021**)

Q19.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	25	B1	cao	
(b)	24	B1	cao	

(Q06 1MA1/2F, Nov 2021)

Q20.

Paper 1MA1:3F			
Question	**Working**	**Answer**	**Notes**
		Yes with evidence	C1 for writing down at least two squares numbers P1 for adding square numbers A1 cao with supporting evidence

(Q12 1MA1/3F/S1, Specimen papers)

Q21.

Question	Working	Answer	Mark	Notes
		16	B1	cao

(Q01 1MA1/1F, June 2017)

Q22.

Question	Answer	Mark	Mark scheme	Additional guidance
	7776	B1	cao	

(Q05 1MA1/2F, Nov 2019)

Q23.

Question	Working	Answer	Mark	Notes
(a)		22	B1	cao
(b)		63	B1	cao
(c)		49	B1	cao

(Q06 1MA1/2F/M3, Specimen papers)

Q24.

Question	Working	Answer	Mark	Notes
(a)		$\frac{1}{5}$	B1	for $\frac{1}{5}$ oe
(b)		2.129754359	B1 B1	for 9.66(…) for 2.1297 – 2.1298

(**Q07 1MA1/2H/M3, Specimen papers**)

Q25.

Question	Answer	Mark	Mark scheme	Additional guidance
	4.2	B1	for 4.2 **or** $\frac{21}{5}$ oe	

(**Q04 1MA1/2F, Nov 2019**)

Q26.

Question	Answer	Mark	Mark scheme	Additional guidance
	odd square	B1	stating an odd square number eg 1, 9, 25, 49, 81, etc.	

(**Q02 1MA1/2F, Nov 2018**)

Q27.

Question	Answer	Mark	Mark scheme	Additional guidance
	4	B1	cao	

(**Q04 1MA1/2F, Nov 2018**)

Q28.

Question	Answer	Mark	Mark scheme	Additional guidance
	1.2	B1	oe	Accept $\frac{12}{10}$ or $\frac{6}{5}$

(**Q03 1MA1/3F, Nov 2018**)

Q29.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	8	B1	cao	
(b)	125	B1	cao	

(Q15 1MA1/1F, June 2019)

Q30.

Question	Answer	Mark	Mark scheme	Additional guidance
	9, 27	B1	cao	Do not award the mark if other numbers are shown.

(Q04 1MA1/3F, June 2019)

Q31.

Question	Answer	Mark	Mark scheme	Additional guidance
	6.25	B1	for 6.25 oe	

(Q04 1MA1/3F, Nov 2020)

Q32.

Question	Answer	Mark	Mark scheme	Additional guidance
	27	B1	cao	

(Q05 1MA1/2F, Nov 2020)

Q33.

Question	Answer	Mark	Mark scheme	Additional guidance
	1.3	B1	cao	

(Q05 1MA1/3F, June 2022)

Q34.

Question	Answer	Mark	Mark scheme	Additional guidance
	9	B1	cao	

(Q02 1MA1/1F, Nov 2022)

Q35.

Question	Answer	Mark	Mark scheme	Additional guidance
	One of: 16, 25, 36, 49	B1	for one correct square number	Allow more than 1 correct square number but no incorrect.

(Q04 1MA1/2F, Nov 2023)

Q36.

Question	Answer	Mark	Mark scheme	Additional guidance
	8	B1		Accept ± 8 or -8

(Q05 1MA1/1F, June 2024)

Q37.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	No and reason	C1	No **and** reason **Acceptable examples** No, because $10^2 = 100$ **or** 10^2 is 10×10 $4^2 = 16$ and $5^2 = 25$ so 20 is not a square number Junaid is wrong because $\sqrt{20} \neq 10$ **or** $\sqrt{20} = 4.47...$ Incorrect because 20 is 2×10 not 10×10 No she multiplied by 2 instead of squaring **or** 10^2 is not 10×2 Wrong as she added instead of multiplying **Not acceptable examples** Yes…. No because 20 is 10×2 Incorrect because 20 is not a square number No because 10^2 is not 20 No because she added No because a square number is when a number is multiplied by itself	
(b)	example	C1	for a correctly evaluated example, eg $12 \div 4 = 3$ or $10 \div 2 = 5$ or $2 \div 4 = 0.5$	Accept rounded and truncated values, eg $2 \div 6 = 0.3(..)$, $100 \div 6 = 16.6(..)$

(Q08 1MA1/2F, Nov 2024)

Q38.

Question	Answer	Mark	Mark scheme	Additional guidance
	1.5	B1	oe eg $\frac{3}{2}$, $1\frac{1}{2}$	

(Q05 1MA1/3F, Nov 2024)

Q39.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	10^{60}	M1	for a correct first step using one of the rules of indices, eg. $10^{150} \times 10^{90} = 10^{240}$ or $10^{360} \div 10^{150} = 10^{210}$ or $10^{360} \div 10^{90} = 10^{270}$ or $\sqrt{10^{360}} = 10^{180}$ or $\sqrt{10^{150}} = 10^{75}$ or $\sqrt{10^{90}} = 10^{45}$	
		M1	for correct use of rules of indices leading as far as $\sqrt{10^{120}}$ or $\frac{10^{180}}{10^{120}}$	
		A1	cao	
(b)	reason	C1	for correct reasoning **Acceptable examples** eg should do 50×2 (not 50^2) because $(12^{50})^2 = 12^{100}$ because when you have a power inside and outside the bracket you times them because $(a^b)^c = a^{bc}$ (not a^{b^c}) **Not acceptable examples** because you need to multiply everything in the brackets by 2 because he should have squared 12 as well you add the powers instead of timesing	

(**Q09 1MA1/3H, June 2022**)

Q40.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	300	M1	for working out $\sqrt[4]{81}$ as 3 **or** $\sqrt[4]{10^8}$ as 10^2 or 100	Mark may be awarded if operations are attempted on 8100000000 eg 300000000
		A1	for 300 **or** 3×10^2 or 3×100	
(b)	$\frac{1}{8}$	M1	for showing a square root of 64 as 8 **or** recognition of the reciprocal eg $\frac{1}{n}$ **or** shows expressions that show an understanding of the ½ index and the minus index eg $\frac{1}{\sqrt{64}}$ or other equivalent forms	
		A1	oe	Accept $\pm\frac{1}{8}$ oe
(c)	3^{2-n}	M1	for $3^{2(n-1)}$ **or** 3^{2n-2} **or** $(3^2)^{n-1}$	
		A1	for 3^{2-n} oe eg $3^{n-2(n-1)}$	

(**Q11 1MA1/1H, Nov 2020**)

Q41.

Question	Working	Answer	Mark	Notes
		2, 7 or 3, 13 or 5, 11 or 2, 23	M1	for identifying two different prime numbers or two numbers which add up to give a square number or for a list of at least 3 prime numbers with no errors **and** a list of 3 square numbers with no errors.
			A1	for two correct prime numbers

(Q09 1MA1/3F, Nov 2017)

Q42.

Question	Answer	Mark	Mark scheme	Additional guidance
	Statement supported by algebra	B1	writing a general expression for an odd number eg $2n+1$	Could be $2n-1$, $2n+3$, etc
		M1	(dep) for expanding ("odd number")^2 with at least 3 out of 4 correct terms	Note that $4n^2+4n+2$ or $2n^2+4n+1$ in expansion of $(2n+1)^2$ is to be regarded as 3 correct terms
		A1	for correct simplified expansion, eg $4n^2+4n+1$	
		C1	(dep A1) for a concluding statement eg $4(n^2+n)+1$ (is one more than a multiple of 4)	

(Q12 1MA1/1H, June 2018)

Q43.

Question	Answer	Mark	Mark scheme	Additional guidance
	243	B1	cao	

(Q03 1MA1/2F, June 2018)

Q44.

Question	Working	Answer	Mark	Notes
		Any even cube	B1	for any even cube number

(Q02 1MA1/2F/M2, Specimen papers)

Q45.

Paper 1MA1: 3F			
Question	Working	Answer	Notes
(i)		17	B1
(ii)	1	16	B1

(Q11 1MA1/3F/N, Specimen papers)