MATHEMATICS FORM ONE MARKING SCHEME 2021

1.	a) -2>-3 b) -3<4 C) 5>-5	**B1** **B1** **B1**	
		1	
2.	(a) $1573 = 11\times11\times13 = 11^2\times13$ (b) $1078 = 2\times7\times7\times11 = 2\times7^2\times11$	**A1** **A1**	
		2	
3.	$240 = 2\times2\times2\times2\times3\times5 = 2^4\times3\times5$ $360 = 2\times2\times2\times3\times3\times5 = 2^3\times3^2\times5$ $600 = 2\times2\times2\times3\times5\times5 = 2^3\times3\times5^2$ $700 = 2\times2\times5\times5\times7 = 2^2\times5^2\times7$ $5\times2^2 = 20$	**M1** **A1**	
		2	
4.	$27 = 3\times3\times3 = 3^3$ $30 = 2\times3\times5 = 2\times3\times5$ $45 = 3\times3\times5 = 3^2\times5$ L.C.M $= 3^2\times2\times5$ $= 270 + 3 = 273$	**M1** **B1** **A1**	
		3	
5	$-7-(-8) = 1$	**M1** **A1**	
		2	
6	(a) $(4\times4) + (2x—2)$ $16 - 12 + 2 = 6$	**M1A1**	

	(b) $\frac{4xy}{z} = \frac{4x-2x-6}{4} = \frac{48}{4}$ $= 12$ c) 2y – 3x +z $= (2x - 6) - (3x - 2) + 4$ $- 12 + 6 + 4 = 2$	**M1A1** **M1A1**	
		6	
7	BODMAS $96 \div 6 = 16 \times 7 \times 15 - 14 \times 5$ $16 + 105 - 70$ $= 51$	**MI** **A1**	
		2	
8	L.C.M = 110 *or* % $\frac{2}{5} \times 110,\ \frac{3}{10} \times 110,\ \frac{6}{5} \times 110,\ \frac{5}{11} \times 110$ $= 44,\ 33,\ 132,\ 50$ *descending order* $\frac{6}{5}\quad \frac{5}{11}\quad \frac{2}{5}\quad \frac{3}{10}$	**M1** **A1**	
		2	
9	(a) $\frac{23}{3} + \frac{33}{5} + \frac{71}{6}$ $= \frac{230+198+355}{30} = \frac{783}{30}$ $= 26\frac{1}{10}$ *or* 26. 1 (b) $= \frac{-2}{3} - \frac{1}{10} - \frac{1}{7}$ $= \frac{-140-21-30}{210} = \frac{-191}{210}$	**M1A1** **M1A1**	
		4	
10	(a)		

	$\frac{45}{60} \div \left(5\frac{1}{12} - 4\frac{1}{5}\right)$ $\frac{61}{12} - \frac{21}{5}$ $= \frac{305-252}{60} = \frac{53}{60}$ $\frac{45}{60} \times \frac{60}{53} = \frac{53}{60}$ (b) $\frac{3}{8} of \left(7\frac{3}{5} - \frac{1}{3}\left(1\frac{1}{4} + 3\frac{1}{3}\right) + 2\frac{2}{5}\right)$ $\frac{5}{4} + \frac{10}{5}$ $\frac{15+40}{12} = \frac{55}{12}$ $= \frac{1}{3} \times \frac{55}{12} = \frac{55}{36}$ $\frac{38}{5} - \frac{55}{36} + \frac{2}{5} = \frac{1368-275+432}{180} = \frac{1525}{180}$ $\frac{3}{8} \times \frac{1525}{180} = 3\frac{17}{96}$	**A1** **A1** **M1** **M1** **M1** **A1**	
		6	
11.	(a) $0.04 = \frac{1}{25}$ (b) $0.6\dot{7}$ $let\ r = 0.677777$ $-10r = 6.777777$ $100r = 67.77777$ $90r = 61$ $= r = \frac{61}{90}$ (c) let $r = 3.256565656$ $-10r = 32.56565656$ $1000r = 3256.565656$ $\frac{990r}{990} = \frac{3224}{990}$ $r = 3\frac{127}{495}$	**A1** **M1** **A1** **Mi** **M1** **A1**	

		6	
12	$(13.42 + 0.321) - (0.31 \times 2.56)$ $13.741 - 0.7936$ $= 12.95$	**M1** **M1** **A1**	
		3	
13.	(a) 509.78 = 509.8 (b) 0.0289 =0.03	**A1** **A1**	
		2	
14	$\frac{1}{3}(a + b) + \frac{1}{5}(a - b)$ $\frac{1}{3}a + \frac{1}{3}b + \frac{1}{5}a - \frac{1}{5}b$ $\frac{5a+5b+3a-3b}{15}$ $= \frac{8a-2b}{15}$	**M1** **M1** **A1**	
		3	
15	$\frac{1\frac{1}{2}+\frac{3}{5}\div\frac{5}{6}of2\frac{2}{5}}{1\frac{7}{10}}$ $\frac{5}{6} \times \frac{2}{5} = 2$ $\frac{3}{5} \times \frac{1}{2} = \frac{3}{10}$ $\frac{5}{2} + \frac{3}{10} = \frac{25+3}{10} = \frac{28}{10}$ $\frac{28}{10} \times \frac{10}{17} = \frac{28}{17} = 1\frac{11}{17}$	**M1** **M1** **A1**	
		3	
16.	36, 192, 120, 744, and 9564		
17	(a) $240 = 2\times2\times2\times2\times3\times5 = 2^4\times3\times5$ $360 = 2\times2\times2\times3\times3\times5 = 2^3 \times 3^2\times5$	**M1** **M1**	

	$600 = 2\times2\times2\times3\times5\times5 = 2^2\times3\times5^2$ $700 = 2\times2\times5\times5\times7 = 2^2\times5^2\times7$ $LCM = 2^4\times3^2\times5^2\times7 = 25,200$ (b) $240 = 2^4\times3\times5$ $360 = 2^3\times3^2\times5$ $600 = 2^3\times3\times5^2$ $700 = 2^2\times5^2\times7$ $G.C.D = 2^2\times5 = 20$ C) $L.C.M + 17$ $= 25200 + 17$ $= 25,217\ Liters$ (d) Twenty-five thousand, two hundred and seventeen	**A1** **M1** **M1** **A1** **M1** **A1** **M1A1**	
		10	
18	(a)$30816\div24 = 1284\ crates$ (b) $1284\times2 = 2568kg$ c) $12 - 2 = 10kg$ $10\times1284 = 12840kg$ $(12\times1284) - (2\times1284)$ $= 15408 - 2568$ $= 12\,840kg$ d) Number of trips $= \frac{1284\ crates}{107\ crates} = 12\ trips$ cost per trips $= sh.5\times107 = sh.535$ $Total\ cost = 535\times12\ trips$ $= sh.6420$	**M1A1** **M1A1** **M1** **M1** **A1** **M1** **M1** **A1**	

19	a) Let his salary be sh. X School fees $^1/_4x$ Remaining $^3/_4x$ Electricity and water bills $^1/_4x \times {}^3/_4x$ $= {}^3/_{16}x$ Remaining $^3/_4x - {}^3/_{16}x$ $= {}^9/_{16}x$ Transport $^1/_9 \times {}^9/_{16}x$ $= 1/16x$ Remaining $= {}^9/_{16}x - {}^1/_{16}x$ $= {}^8/_{16}x = {}^1/_2x$ $^1/_2x = 3,400$ $X = 3,400 \times 2$ $= 6,800$	M 1 M 1 M 1 M 1 A 1	
	b) School fees $= {}^1/_4 \times 6,800$ =sh. 1,700	A 1	
	c) Transport $= {}^1/_{16}x$ x $^1/_{16} \times 6,800$ Sh. 425	A 2	
	d) Electricity and water bills $^3/_{16}x = {}^3/_{16} \times 6,800$ Sh. 1,275	A 2	
20	Use tables to find the squares of; (a) 1.28 = 1.638 (b) 223.4 = 49910 (c) Find the square root of 1225 using factorization method		

	5 x 245 5 x 5 x 49 5 x 5 x 7 x 7 $5^2 \times 7^2$ $\sqrt{5^2 \times 7^2}$ 5 x 7 = 35 (d) Find the square root of 0.0168 square root tables 0.1296		
21	(a) k =70 h =70 g =44 (b) a. 62 $=6.2 \times 10^1$ b. 4269 $=4.269 \times 10^3$ c. 0.354 $= 3.54 \times 10^{-1}$ d. 0.0000999 $= 9.99 \times 10^{-5}$ e. 5 $= 5.0 \times 10^0$ (c) Write forty-eight thousandths in figures 0.048		