IGCSE - Module 1 – 2014 Answers

1)

1	11 or –11	**1**	

2)

12	$\frac{55}{30}+\frac{27}{30}$ oe **or** (1)$\frac{25}{30}+\frac{27}{30}$ oe	**M1**	for denominator of $30k$
	$\frac{82}{30}$ oe **or** (1)$\frac{52}{30}$ oe	**M1**	for denominator of $30k$ dependent on previous **M1**
	$2\frac{11}{15}$ **M2** must be scored	**A1**	If **M0** scored then **SC1** for common denominator of $30k$ seen

3)

12 (a)	$\frac{11}{12}-\frac{4}{12}$ oe	**2**	**M1** correct use of a common denominator
	$\frac{7}{12}$ **cao ww 0**		**A1**
(b)	$\frac{1}{4}\times\frac{13}{11}$ oe	**2**	**M1** inversion and operation change
	$\frac{13}{44}$ **cao ww 0**		**A1**

4)

2	$\frac{1}{100}+\frac{4}{25}$ or $0.1^2+0.4^2$ oe	**M1**	
	$\frac{1}{100}+\frac{16}{100}=0.17$ or $0.01+0.16=0.17$	**M1**	Independent

5)

4	$\tan 25 < \sqrt{0.22} < 0.47 < \frac{8}{17}$	**2**	**M1** correct conversion to decimals 0.466, 0.469, 0.471

6) Simplify

a) $15x^3$ [2]

b) $5x/y$ [2]

7)

$100n = 3.4343..$

$n = 0.03434...$

$99n = 3.4$ Method[1] Answer[1]

$\frac{34}{990}$

8)

i) 5.32 [1]

ii) 75 [1]

iii) 66000 [1]

9)

5	64000 or 6.4×10^4	**2**	**SC1** for 63800 or 6.38×10^4 **or** figs 64 or 6.4×10^k in answer space.

10) Specimen

2	3×10^{27}	**2**	**M1** for $6 \div (2 \times 10^{-27})$

11) a) 36 [1] b) 17 [1]

12) s13 – 23-9

9	**(a)**	1.1×10^5	**2**	**B1** for 110 000 oe e.g. 11×10^4
	(b)	5×10^3	**2**	**B1** for 5000 oe e.g. 0.5×10^4

13)

ai) Method [1]

$3 \times 3 \times 3 \times 3 \times 7 \times 7$ Method [1]

$3^4 \times 7^2$ Answer [1] if only this form shown full marks

aii) pairs of the same number [1]

b) $12n - 4$ $12n[1mark]$
$-4[1mark]$

14)

(b)	**(i)**	-1	**1**	
		n^2 oe	**1**	
		$5n$ oe	**1**	
		$n^2 + 5n$ oe	**1**	
	(ii)	20	**2**	**M1** for their $n^2 + 5n = 500$ or 20 **and** 25 seen

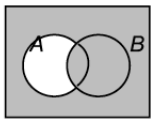
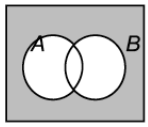
15 -

6 (a) (i)	180	**1**	
(ii)	20	**1**	
(b)	220	**1**	

16 -

15 (a)	4	**2**	**M1** for attempt at sum of all numeric and x terms equated to 74
(b)	26	**1FT**	=18 + 2 × their (a)
(c)	8	**1**	

17

1	 	**1** **1**	

18)

7	30.7975 cao	**2**	**M1** 6.35 **and** 4.85 seen

19)

$Least - 4.45$
$Greatest - 4.55$ [2 Marks]

b) $\dfrac{shelf - smallest}{cubes - largest} - \dfrac{185}{4.55} = 40.66$ - Method [2]

Therefore if the shelf it at it least value and the cubes are all at their largest value you can only fit 40 on the shelf.

Explanation and recognizing you can not have 0.66 of a cube [2]