

Topic 2 Number (Post-TT) [39] MARKSCHEME

1.

(a) eg $\frac{2}{3} \frac{3}{5} \frac{4}{7} \frac{5}{7} \frac{5}{8} \frac{5}{9} \frac{6}{9} \frac{7}{10}$ B1

(b) $1\frac{5}{4} - \frac{2}{5}$ or $2 + \frac{5}{20} - \frac{8}{20}$ M1

or $3.25 - 1.4$

Accept $\frac{13}{4} - \frac{7}{5}$

(One of $\frac{5}{20}$ or $\frac{8}{20}$ correct; must both be over 20)

$= 1\frac{25-8}{20}$ or $2 - \frac{3}{20}$ M1 dep

or $\frac{65-28}{20}$

$= 1\frac{17}{20}$ A1

Accept $\frac{37}{20}$ or 1.85

Note: $2\frac{3}{20}$ on its own scores SC1

[7]

2.

(a) Use of exploding tree or division into 2 and 3 M1
Correctly identifying a factor of 2 or 3 ie 2×48 or 32×3

$2 \times 2 \times 2 \times 2 \times 2 \times 3$ A1

Do not need to see \times signs

$2^5 \times 3$ A1

(b) $36 = 2^2 \times 3^2$ M1
or list factors must include 12

HCF = 12 A1

SC1 for 6

[5]

3.

(a) 7.56×10^{-3} B1

(b) $4\pi 6400^2$ M1

514718540.4 A1

5144.....to 5149.....

$5(.147...) \times 10^8$ A1

With no working SC2 5E08, 5^{08} , (5^8 gets 0)

Accept 5.1, 5.15×10^8

[4]

4.

- (a) (i) y^9 B1
 (ii) y^5 B1
 (iii) y^{14} B1
- (b) (i) y^{14} or (a)(iii) Blft
ft their answers from Part (a)
- (ii) y^5 or a(ii) Blft
ft their answers from Part (a)

[5]

5.

$$\frac{30}{80} \frac{25}{80} \frac{32}{80} \left(\frac{20}{80} \right)$$

M1 for converting 2 of the 3 to fractions or decimals to compare

Or M2

$$0.37(5) \quad 0.31(25) \quad 0.4 (0.25)$$

Reciprocal method:

$$2.66... \quad 3.2 \quad 2.5 \quad 4$$

(must compare with all 3)

Accept correct diagrams

$$\frac{5}{16} \quad \text{A1}$$

[3]

6.

2.7×10^4	M1	For evidence of a correct method eg. $27 \times 10^{4+1}$
	A1	

7.

$$8x^5y^7 \quad \text{B2}$$

-1 each error or omission

[2]

8.

a		$7\frac{1}{2}$	M1 $\frac{9}{4} \times \frac{10}{3}$ oe M1 $\frac{90}{12}$ oe A1 $7\frac{1}{2}$
b		$5\frac{1}{4} + 6\frac{2}{3}$ or $5\frac{2}{3} + 6\frac{1}{4}$	B1 $5\frac{1}{4} + 6\frac{2}{3}$ or $5\frac{2}{3} + 6\frac{1}{4}$

9.

$$5.1 \times 10^7 + 3.89 \times 10^6$$

$$= 51 \times 10^6 + 3.89 \times 10^6$$

M1

$$= 54.89 \times 10^6$$

$$= 5.489 \times 10^7$$

A1

(Accept 54 890 000 54.89×10^6 etc)

SC1 54 900 000 or 55 000 000

[2]

10.

(a)	0.4	2 1 AO1.2 1 AO1.3a	M1 for 0.44... or 4 + 9 shown in working
(b)	$\frac{4}{15}$	3 1 AO1.2 2 AO1.3b	B2 for $\frac{24}{90}$ Or M1 for 2.66... and 26.66... seen or answer $\frac{k}{90}$

11.

15, 20, 24	<p>P1 Process to start to find common multiple eg. prime factor decomposition of 6 and 8 or list of at least 3 multiples of all numbers</p> <p>P1 process to find number of packets for at least colour or 120 identified</p> <p>A1</p>
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