FORM 2 MATHEMATICS JUNE EXAM 2012 MEMORANDUM

Question 1

1.1 B
1.2 E
1.3 C
1.4 A
1.5 D (5)

Question 2

2.1.1 11 ; 13 Prime numbers (2)
2.1.2 64; 125 Cube numbers (2)

2.2.1 2^{21} (1)
2.2.2 3 (1)

2.3.1 Pattern 1 = 4
Pattern 2 = 4 **+ 7 = 11**
Pattern 3 = 4 **+ 7 + 9 = 20**
Pattern 4 = 4 **+ 7 + 9 + 11 = 31** (3)
2.3.2 **Pattern 8 = 4 + 7 + 9 + 11 + 13 + 15 + 17 + 19 = 95** (2)

Question 3

3.1 $\frac{7}{12};\frac{9}{12};\frac{8}{12}$
$\therefore \frac{3}{4};\frac{2}{3};\frac{7}{12}$ (3)

3.2.1 $\frac{2}{3}+\frac{1}{4}-\frac{1}{6}$
$=\frac{8+3-2}{12}$
$=\frac{9}{12}=\frac{3}{4}$ (3)

3.2.2 $\frac{3}{4}\times\frac{8}{9}$
$=\frac{2}{3}$ (2)

3.2.3 $\frac{5}{3}\times-\frac{3}{2}=-\frac{5}{2}$ (3)

3.2.4 $\frac{10}{3}+\frac{2}{5}$
$=\frac{50+6}{15}$
$=\frac{56}{15}$ (3)

Question 4

4.1 $\frac{13}{100} \times 345 = R44{,}85$ (2)

4.2 $100 - 23 = 77\,\%$

$\frac{77}{100} \times 450 = R346{,}50$ (3)

4.3.1 $\frac{8}{22} \times 100 = 36{,}36\,\%$ (3)

4.3.2 $\frac{108}{100} \times 30 = R32{,}40$ (3)

4.4 $A = 14500(1 + \frac{11}{100}.7) = R25665$ (3)

Question 5

5.1 $15 + 2 = 17$ (2)

5.2 $5 \times 9 \div 3 = 15$ (2)

5.3 $(15 + 6) \div 3$

$= 21 \div 3$ (2)

$= 7$

5.4 $5 \times (3 + 2)$

$= 5 \times 5$ (2)

$= 25$

5.5 $-2 + 12 - 36 = -26$ (2)

5.6 $-5 \times 4 + 36$

$= -20 + 36$ (2)

$= 16$

Question 6

6.1.1 $31 : 15$ (1)

6.1.2 $1250 : 2600$

$= 25 : 52$ (2)

6.1.3 $100 : 45$

$= 20 : 9$ (2)

6.1.4 $\frac{15}{20} : \frac{16}{20}$ (2)

$= 15 : 16$

6.2 $\frac{10}{23} \times 345 = 150$ Rugby players (2)

6.3.1 $\frac{350}{100} \times 9{,}5 = 33{,}25l$ (2)

6.3.2 $\frac{45}{9{,}5} \times 100 = 474km$ (2)

6.4.1 $6100 \div 8{,}13 = \$750{,}31$ (2)

6.4.2 $50 \times 8{,}13 = R406{,}50$ (2)

Question 7

7.1.1 53 52 50 46 45 44 44 43 42 40 39 37 (1)

7.1.2 $53 - 37 = 16$ kg (1)

7.1.3 $\frac{535}{12} = 44{,}58\,\text{kg}$ (3)

7.1.4 44 (1)

7.1.5 44 (1)

7.1.6 ***Answer sheet***

7.1.7 $\frac{543{,}8}{12} = 45{,}32\,\text{kg}$
$\therefore 45{,}32 - 44{,}58 = 0{,}74\,\text{kg}$ (2)

7.2.1 ***Answer sheet***

7.2.2 $\frac{1772{,}5}{28} = 63{,}3\%$ (2)

Question 8

8.1.1 $d + d + 1 + d + 2$ (1)

8.1.2 $a^2 + 5b$ (2)

8.1.3 $30 - x$ (1)

8.2.1 $6a$ (1)

8.2.2 $12b + 7c$ (2)

8.2.3 $6a + 12b + 7c$
$= 6(55) + 12(5{,}50) + 7(12)$
$= R480$ (3)

8.3.1 -4 (1)

8.3.2 4 (1)

8.3.3 -1 (1)

8.3.4 $3(2)^2 + 5(2)(-1) - 4 - (-1)^3$
$= 3(4) - 10 - 4 - (-1)$
$= 12 - 10 - 4 + 1$
$= -1$ (3)

Question 9

9.1 $5a$ (1)

9.2 $-6b$ (1)

9.3 $3c$ (1)

9.4 $-x - x = -2x$ (2)

9.5 $-6ad$ (2)

9.6 $8a$ (1)

9.7 $7x + 10x - 3x = 14x$ (2)

9.8 $3x - xy + 2y$ (3)

9.9 $-3a - 5a + a = -7a$ (2)

Question 10

10.1 Wii - Over 40 million sold, others both less than 30 million sold (2)

10.2 Wii - 2011 (2)

10.3 Wii - 2008 to 2009 (2)

10.4 2008 (1)

Question 11

$$\frac{1}{5}+\frac{1}{4}\times\frac{4}{5}+\frac{1}{3}\left(1-\left(\frac{1}{5}+\frac{1}{5}\right)\right)$$

$$\frac{1}{5}+\frac{1}{5}+\frac{1}{3}\times\frac{3}{5}+\frac{1}{2}\left[1-\left(\frac{1}{5}+\frac{1}{5}+\frac{1}{5}\right)\right]$$

$$\frac{1}{5}+\frac{1}{5}+\frac{1}{5}+\frac{1}{2}\times\frac{2}{5}$$

$=\frac{4}{5}$ of the lake is what the dragon drank

$$\therefore 1-\frac{4}{5}=\frac{1}{5}=20\,\%$$

OR.....

Dragon drank $\frac{1}{5}$ of the lake. Which meant $\frac{4}{5}$ was left.
Then he drank $\frac{1}{4}\times\frac{4}{5}=\frac{1}{5}$. Which meant $\frac{3}{5}$ was left.
Then he drank $\frac{1}{3}\times\frac{3}{5}=\frac{1}{5}$. Which meant $\frac{2}{5}$ was left.
Then he drank $\frac{1}{2}\times\frac{2}{5}=\frac{1}{5}$. Which meant $\frac{1}{5}$ was left.

There was $\frac{1}{5}=20\%$ of the lake left. (4)

TOTAL 135

F2 MATHEMATICS ANSWER SHEET

NAME: MEMO **CLASS:**

MATHS TEACHER:

QUESTION 7.1.6

3	7 9
4	0 2 3 4 4 5 6
5	0 2 3

(3)

QUESTION 7.2.1

Percentage Intervals	Frequency	Midpoint	Freq. X Midpnt.
30 – 39%	**2**	**34,5**	**69**
40 – 49%	**4**	**44,5**	**178**
50 – 59%	3	54,5	163,5
60 – 69%	10	64,5	645
70 – 79%	6	74,5	447
80 – 100%	3	90	270

TOTAL FREQUENCY = 28 **TOTAL PERCENTAGES =** 1772,5

(6)