Gr 8 MATHEMATICS JUNE 2014 EXAM

MEMO

SECTION A

Question 1

1 ✓per correct answer

1.1	C
1.2	B
1.3	A
1.4	C
1.5	C
1.6	B
1.7	A
1.8	D
1.9	C
1.10	B

[10]

QUESTION 2

1 mark per row

Number		***Natural***	***Integer***	***Rational***	***Irrational***	***Real***
2.1	3	✓	✓	✓		✓
2.2	$\sqrt{25}$	✓	✓	✓		✓
2.3	$\frac{22}{7}$			✓		✓
2.4	$3,1\dot{2}$			✓		✓
2.5	2,315…				✓	✓

[5]

QUESTION 3

3.1.1 18 or 24 ✓(accept either one) (1)

3.1.2 49 ✓ (1)

3.1.3 13 ✓ (1)

3.1.4 8 or 24 ✓(accept either one) (1)

3.1.5 13✓ (1)

3.1.6 24✓ (1)

3.2

2	360
2	180
2	90
3	45
3	15
5	5
	1

✓✓ for ladder/factor tree, -1 per mistake

$360 = 2^3 \times 3^2 \times 5$✓ (3)

[9]

QUESTION 4

4.1 $2 - 4(-5)$✓$= 22$✓ (2)

4.2 $(16 \times 2$✓$- 8$✓$) \div 3 = 8$✓ (3)

4.3 $\left(\frac{3}{2} + \frac{15}{4}\right)$ ✓$\div \left(\frac{3}{8} - \frac{2}{8}\right)$ ✓

$= \left(\frac{6}{4}$ ✓$+ \frac{15}{4}\right) \times \left(\frac{8}{1}\right)$ ✓$= \frac{21}{4}$ ✓$\times \frac{8}{1} = 42$✓ (6)

[11]

QUESTION 5

5.1 Four terms ✓ (1)

5.2 $\frac{1}{3}$ ✓ (1)

5.3 2 ✓ (1)

5.4 $\frac{y^5}{3} + 7y^2 - 6y + 2$✓✓ (-1 per error) (2)

5.5 $\frac{(-1)^5}{3} + 7(-1)^2 - 6(-1) + 2$✓

$= -\frac{1}{3} + 7 + 6 + 2$ ✓$= 14\frac{2}{3}$ ✓ (3)

[8]

QUESTION 6

6.1 $3a$✓ (1)

6.2 a^3✓ (1)

6.3 $-6a$✓ (1)

6.4 $-3a^2 + 5a^2$ ✓$= 2a^2$ ✓ (2)

6.5 $-8x^3$✓✓ (2)

6.6 $-15a^4b^6$✓✓✓ (3)

6.7 $4a^6b^8$✓✓✓ (3)

6.8 $3x^2y$ ✓$- 5xy^2$ ✓ (2)

6.9 $-3x + 6$ ✓$- 8x - 12$ ✓$= -11x - 6$ ✓✓ (4)

6.10 $\frac{4x^2}{y^2}$ ✓✓ ✓ (3)

6.11 $\frac{5x^2}{10x^2}$ ✓$= \frac{1}{2}$ ✓ (2)

6.12 $8a^4e^5$✓✓✓ (3)

6.13 $5a + 2c + 4b$✓✓✓ (3)

[30]

QUESTION 7

7.1.1 $x + 3$✓ (1)

7.1.2 $p - 5$✓ (1)

7.1.3 mn ✓ (1)

7.1.4 $5x^2$✓ (1)

7.1.5 $4(x + y)$✓✓ (2)

7.2.1 $x = -14$✓ (1)

7.2.2 $x = -72$✓ (1)

7.2.3 12✓$= 3x$✓

$x = 4$✓ (3)

7.2.4 $4x - 8$✓$- 2x - 2$✓$= 4$

$2x = 14$✓

$x = 7$✓ (4)

[15]

QUESTION 8

8.1.1 Reflex✓ (1)

8.1.2 70° ✓ (1)

8.1.3 Scalene ✓ (1)

8.1.4 Complementary ✓ (1)

8.1.5 180° ✓ (1)

8.2.1 Angles on a straight line ✓ (1)

8.2.2 Vertically opp. ✓ (1)

8.2.3 Revolution ✓ (1)

8.2.4 Co-interior angles PQ$||$RS✓ (1)

8.2.5 Alternate angles PQ$||$RS✓ (1)

8.2.6 Corresponding angles RS$||$TU✓ (1)

8.3.1 $b = 35°$ Vertically opposite angles ✓ (2)

$c = 45°$ Angles on a straight line ✓

8.3.2 $h = 85°$ Ext. angles of Δ✓ (1)

8.3.3 $k = 44°$ Isosceles Δ✓ (1)

8.3.4 $x = 160°$ Alt. angles AB$||$CD✓ (1)

$y = 20°$ Angles on a straight line✓ (1)

No reason, no mark. No $//$ lines named, no mark ☹

[17]

Total section A: 105

SECTION B

QUESTION 9

9.1.1 $\frac{4a^4b^8 5ab^2 \checkmark}{10a^2 \checkmark} = \frac{20a^5b^{10}}{10a^2} \checkmark = 2a^3b^{10} \checkmark$ (4)

9.1.2 $\frac{16x^6}{2x^3} - 8x^3 = 8x^3 \checkmark - 8x^3 \checkmark = 0 \checkmark$ (3)

9.1.3 $2a^3b + 2ab^3 \checkmark - a^3b - 2ab^3 \checkmark = a^3b \checkmark$ (3)

9.2 $5x^2 - 5xy + 9 \checkmark\checkmark\checkmark$ (3)

9.3 $61(2 + 3 + 5) \checkmark = 610 \checkmark$ (do not accept long multiplication) (2)

9.4 $A + 90 = 160$ ✓

$A = 70 \checkmark$

$X = 20 \checkmark$ (3)

[18]

QUESTION 10

10.1.1 $2m - 12 = 24 \checkmark$

$2m = 36 \checkmark$

$m = 19 \checkmark$ (3)

10.1.2 $-18 + 3y \checkmark + 2y^2 = 9 + 2y^2 + 6y \checkmark$

$-3y = 27 \checkmark$

$y = -9 \checkmark$ (4)

10.1.3 $2x - 3 = 2x - 8 \checkmark$

$-3 = -8 \checkmark$

$\therefore False\ equation \checkmark$ (3)

10.2 $x + x + 1 + x + 2 = 72$✓

$3x = 69$✓

$x = 23$✓

$\therefore Her\ birthday\ is\ the\ 24th\ of\ April$✓ (4)

[14]

QUESTION 11

11.1 60°✓ (1)

11.2 85°✓ (1)

11.3 $35° + 3x - 30° + 2x + 25° = 180°$ Angles on a str line ✓(give mark if no reason provided and equation is correct)

$5x + 30° = 180°$

$5x = 150°$✓

$x = 30°$✓

$y = 85°$✓ Corr. angles ST||QR✓

$z = 60°$✓ Co-int angles ST||QR✓

(7)

11.4.1 180°✓ (1)

11.4.2 $30 + 30$✓$+ \frac{30}{3}$ ✓$= 70°$✓ (3)

[13]

Total section B: 45

Total: 150