

Form 2 Mathematics June 2013 Memorandum

QUESTION 1

1.1.1 10;12 (2)

1.1.2 25;36 (2)

1.1.3 162;-486 (2)

1.1.4 64;125 (2)

1.1.5 8;13 (2)

1.2.1 225;91;60;25;16 (2)

1.2.2 1 (1)

1.2.3 $\sqrt{3}$ (1)

1.2.4 25;60;225 (1)

1.2.5 3;7 (1)

1.3 $225 = 3^2 \times 5^2$ (2)

[18]

QUESTION 2

$$2.1 \quad \frac{9}{16}; \frac{3}{4} = \frac{12}{16}; \frac{5}{8} = \frac{10}{16}$$

$$\frac{9}{16}; \frac{5}{8}; \frac{3}{4} \quad (3)$$

$$2.2.1 \quad 3\frac{7}{8} - 1\frac{5}{4} = \frac{31}{8} - \frac{9}{4} = \frac{31-18}{8} = \frac{13}{8} \quad (3)$$

$$2.2.2 \quad 1\frac{1}{3} + 2\frac{1}{6} = \frac{4}{3} + \frac{13}{6} = \frac{8+13}{6} = \frac{21}{6} \quad (3)$$

$$2.2.3 \quad \frac{5}{8} \times \frac{24}{25} = \frac{3}{5} \quad (2)$$

$$2.2.4 \quad \frac{3}{4} \div \frac{4}{3} = \frac{3}{4} \times \frac{3}{4} = \frac{9}{16} \quad (2)$$

$$2.3 \quad \frac{3}{5} \left(\frac{\times 2}{\times 2} \right) = \frac{6}{10} = 0,6 \quad (2)$$

[15]

QUESTION 3

3.1.1 $3:5$ (1)

3.1.2 $1,8kg : 3600g$

$$1800g : 3600g$$

$$1:2$$
 (2)

3.1.3 $R2,50 : 50c$

$$250c : 50c$$

$$5:1$$
 (2)

3.1.4 $\frac{3}{4} : \frac{36}{24}$

$$\frac{3}{4} : \frac{6}{4}$$

$$3:6$$

$$1:2$$
 (2)

3.2.1 $14 \times 40 = R560$ (2)

3.2.2 $\frac{126}{14} = \frac{63}{7} = 9l$ (2)

3.3.1 $60 \times 6 = 360km$ (2)

3.3.2 $t = \frac{d}{s} = \frac{30}{60} = \frac{1}{2} \text{ hours}$ (3)

3.3.3 $\frac{120}{0,5} = 240km / hr$ (3)

3.4 $\frac{35}{100} \times \frac{200}{1} = 70$ (2)

3.5 $\frac{20}{80} \times 100 = 25\%$ (2)

$$3.6.1 \quad 90\% \quad (1)$$

$$3.6.2 \quad \frac{90}{100} \times \frac{20}{1} = R18 \quad (2)$$

$$3.7 \quad \frac{250}{1} \times \frac{20}{100} = R50$$
$$R250 + R50 = R300 \quad (2)$$

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QUESTION 4

$$4.1 \quad (6+3)^2 + (9-10 \div 2)$$
$$= (9)^2 + (9-5)$$
$$= 81+4$$
$$= 85 \quad (2)$$

$$4.2 \quad 4^2 + 2 \times 7^2 - 3$$
$$= 16 + 2 \times 49 - 3$$
$$= 16 + 98 - 3$$
$$= 111 \quad (2)$$

$$4.3 \quad (-2+3) \times 4 + (-6)^2$$
$$= 1 \times 4 + 36$$
$$= 40 \quad (2)$$

$$4.4 \quad -100 \div (-10 \times -1)$$
$$= -100 \div 10$$
$$= -10 \quad (2)$$

$$4.5 \quad -3^2 - (6-2) - 2$$
$$= -9 - 4 - 2$$
$$= -15 \quad (2)$$

[10]

QUESTION 5

5.1.1 $17x - 21$ (1)

5.1.2 $\frac{d}{b}$ or $\frac{b}{d}$ (1)

5.1.3 $a + \frac{b}{5}$ or $a + \frac{5}{b}$ (2)

5.1.4 $18 - 6y$ or $6y - 18$ (2)

5.1.5 $mn \geq p$ (2)

5.2.1 8 (1)

5.2.2 -4 (1)

5.2.3 4 (1)

5.3.1 $\frac{3(6) - (-2)}{-(-1)}$
 $= \frac{18 + 2}{1}$
 $= 20$ (3)

5.3.2 $(3 - 2)^2 + (-1 + 2)^2$
 $= 1 + 1$
 $= 2$ (3)

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QUESTION 6

$$6.1.1 \quad -11a + 3 \times 10a + 4ba - 8ba$$

$$= -11a + 30a - 4ba$$

$$= 19a - 4ba \quad (2)$$

$$6.1.2 \quad 10r^2 - 128r^2$$

$$= -118r^2$$

(2)

$$6.1.3 \quad 4m^2 \times 3 + 12m^3 \div 3m$$

$$= 12m^2 + 4m^2$$

$$= 16m^2$$

(3)

$$6.1.4 \quad (-12a - 13a) + (-2hg) - 8gh$$

$$= -25a - 2gh - 8gh$$

$$= -25a - 10gh$$

(2)

$$6.1.5 \quad -2x + 5k + 10x - 9k + 15x$$

$$= 23x - 4k$$

(2)

$$6.2 \quad 5x^2 + 3x - 8$$

$$- \frac{3x^2 - 6x + 4}{}$$

$$2x^2 + 9x - 12$$

(4)

[15]

QUESTION 7

7.1 x^{21} (1)

7.2 $x^{12}y^6$ (2)

7.3 $144x^5y^4w^{13}$ (2)

7.4 y^6 (1)

7.5 $12x^4$ (2)

7.6 u^{13} (1)

7.7
$$\frac{(n^2h^3u)^2 + 4n^4h^6u^2}{15n^4u^2}$$
$$= \frac{n^4h^6u^2 + 4n^4h^6u^2}{15n^4u^2}$$
$$= \frac{5n^4h^6u^2}{15n^4u^2}$$
$$= \frac{h^6}{3}$$
 (4)

[13]

QUESTION 8

$$\frac{60}{5} = 12$$

$$12 \text{ pies} - 4 \text{ pies} = 8 \text{ pies}$$

or

$$4 \text{ pies} : 20 \text{ pieces}$$

$$12 \text{ pies} : 60 \text{ pieces}$$

$$12 \text{ pies} - 4 \text{ pies} = 8 \text{ pies} \quad [4]$$

TOTAL: 120