Form 3 JUNE EXAM MEMO 2016

	QUESTION 1		
1.1	$8x^6$	1A1A	2
1.2	3^4 *or* 81	2	2
1.3	$\frac{5a^2b}{3ab}\times\frac{27}{20a^3}$ $=\frac{9}{4a^2b}$	1 invert 1A 1A	3
1.4	$\frac{2}{x^2}\times\frac{x^4}{4}=\frac{x^2}{2}$	1A 1A	2
1.5	2	1A	1
2.1	Quadrinomial	1A	1
2.2	2	1A	1
2.3	5^{TH}	1A	1
2.4	$\frac{1}{2}$	1A	1
2.5	$-5x^5-x^2+\frac{x}{2}+2$	1A	1
2.6	$-3(2)^5+\frac{2}{2}-(2)^2+2=-97$	1SUB 1A	2
2.7	$-3x^2+2+9x+2x^3-(x^2-2x+2)$ $-3x^2+2+9x+2x^3-x^2+2x-2$ $=2x^3-4x^2+11x$	1M 1change sign 1A	3
3.1.1	$-8xy^2+4x^2y$	1A1A	2
3.1.2	$9a^4b^2c-12a^2b^3c-3a^2b^2c^2$	1A1A1A	3
3.1.3	$2x^2-x-3$	1A1A1A	3
3.1.4	$x^2-8x-16-x^2+3x$ $=-5x+16$	1A1A 1A	3
3.1.5	$\frac{x^2}{4}+\frac{xy}{4}+\frac{y^2}{16}$	1A1A1A	3
3.1.6	$-x^3y^6$	1A1A1A	3
3.1.7	$\sqrt{\frac{36x^3y^6}{x}}$ $=\sqrt{36x^2y^6}$ $=6xy^3$	1A 1simlify 1A	3
3.2.1	$4t(2t-1)$	1A1A	2
3.2.2	$(2a-5)(2a+5)$	1A1A	2
3.2.3	$(x-3)(x-2)$	1A1A	2

3.2.4	$2(x^4-1)$ $=2(x^2-1)(x^2+1)$ $=2(x-1)(x+1)(x^2+1)$	1A 1A 1A	3
3.2.5	x^2+81 *no factors*	1A	1
4.1	$\frac{x-3}{2x}\times\frac{2x}{(x-3)(x+1)}$ $=\frac{1}{(x+1)}$	1M 1 factor 1A	3
4.2	$\frac{3x}{2}$	1A 1A	2
4.3	$\frac{x(-x^2+2)}{x}+\frac{5(-3x^2+1)}{5}$ $=-x^2+2-3x^2+1$ $=-4x^2+3$ or $\frac{5(-x^3+2x)-x(15x^2-5)}{5x}$ $=\frac{-5x^3+10x-15x^3+5x}{5x}$ $=\frac{-20x^3+15x}{5x}$ $=\frac{5x(-4x^2+3)}{5x}$ $=-4x^2+3$	1M 1lcd 1A 1 factor 1A	5
5.1	$2x-5x=16+5$ $-3x=21$ $x=-7$	1M 1A	2
5.2	$2x-(x-1)=6$ *lcd* $=2$ $2x-x+1=6$ $x=5$	1 lcd 1A 1CA	3
5.3	$(x-1)(x+1)=0$ *or* $x^2=1$ $x=1\ ;-1$ $x=\pm\sqrt{1}$ $x=1\ ;-1$	1M 1A 1A	3
5.4	$3x-4x\geq -6+2$ $x\leq 4$	1A 1A	2
6.1	$6y+3y+90^0=180^0$ ($\angle$'s *on str line*) $9y=90^0$ $y=10^0$	1M 1reason 1A	3
6.2	$m=125^0$ ($\angle$'s *on str line*) $n=55^0$ (*vert opp* $\angle$'s *or* $\angle$'s *on str line*) $p=70^0$ (*vert opp* $\angle$'s) $q=55^0$ (*sum* $\angle$'s Δ *or ext* $\angle$ *of* Δ) $r=125^0$ ($\angle$'s *on str line or ext* $\angle$ *of* Δ)	1A 1R 1A 1R 1A 1R 1A 1R 1A 1R	10

6.3	$x + 44^0 = 75^0$ (*ext* $\angle$ *of* Δ) $x = 30^0$ $75^0 = 44^0 + y$ (*corr* $\angle$*'s* $AD//BC$) $30^0 = y$	1M 1R 1A 1R 1A	 5
6.4	$\hat{E}_2 = x$ (*alt* $\angle$*'s* $CS//HN$) $\hat{W}_1 = x$ (*iso* Δ) $x = 55^0$ (*sum* $\angle$*'s* Δ)	1A 1R 1A 1R 1A 1R	 6
6.5	*In* Δ *ABD and* Δ *CDB* $\hat{B}_2 = \hat{D}_1 = 90^0$ $AD = CE$ (*given*) $BD = BD$ (*common*) $\therefore \Delta\ ABD \equiv \Delta\ CDB$ (*RHS*)	1A 1A 1A 1A 1A	 5
6.6	$64^0 + x + x = 180^0$ (*iso* Δ ; *sum* $\angle$*'s* Δ) $x = 58^0$ $2y = 58^0$ (*opp* $\angle$*'s of parm*) $y = 29^0$ $\hat{C}_1 = 58^0$ (*alt*$\angle$ *'s* $AD//BC$) $z = 180^0 - 29^0 - 58^0$ (*sum* $\angle$*'s* Δ) $z = 93^0$	1A 1A 1A 1A 1A1R 1A 1A	 8
6.7	Trapezium and Kite	1A 1A	2
7.1	$CE = 30\ mm$ ($BE = 90mm$) $CD = 50\ mm$ (*opp sides parm*) $50^2 = 30^2 + DE^2$ (*pyth*) $DE = 40\ mm$ $\therefore$ *Perimeter* $= 2(60) + 50 + 40$ $= 210\ mm$	1A 1A 1A 1CA 1CA	 5
7.2	$A = \frac{1}{2}(60 + 90) \times 40$ $= 3000\ mm^2$	1sub 1A 1A	 3
7.3	*Area of parm* $= 60\ mm \times 40\ mm$ $= 2400\ mm^2$	1A 1CA 1CA	 3