Mark Scheme 2342
January 2007

2007 INTERMEDIATE PAPER MARK SCHEME

SECTION A

1	(a)	Correct ordered stem and leaf	W2	W1 for 21 or 22 correct or at least 21 correct in an unordered diagram
		Key	W1	
	(b)	47	W1	f.t from stem and leaf eg 46.5 if only 22 values
	(c)	$\frac{7}{23}$	W2	W1 for 7 seen f.t. from stem and leaf
			6	
2		0.25×6400	M1	Complete attempt
		1600	A1	W2 for 1600 seen
		24×250	M1	Complete attempt
		6000	A1	W2 for 6000 seen
		1200	A1	Answer only W5 for 1200 W4 for 7600
			5	
3	(a)	Rotation or turn and no other transformation	W1	Ignore translations
		90°	W1	270°
		Clockwise centre (0 , 0)	W1	Anticlockwise
	(b)	Correct translation	W2	W1 for each direction SC 1 for directions reversed
			5	
4	(a)	Attempt at $3 \div 8$	M1	
		37.5	A1	W1 for 12.5 seen or figs 375 Answer only W2
	(b)	1.25	W1	
			3	

5	(a)	$x(x-2)$ seen	W1	Accept $x \times x - 2$
	(b)	8	W1	
	(c)	4 points plotted to within 1 mm	P1	f.t. from table
		Smooth curve through their 5 points	C1	
	(d)	Use of A = 2	M1	
		2.7 to 2.8	A1	Answer only W2
			6	
6	(a)	42°	W1	
		Alternate or Z angles	W1	
	(b)	94°	W1	
		Opposite angles of a cyclic quadrilateral	W1	
		Angles on a straight line (=180°)	W1	
	(c)	No. Angle ABC $\neq$ 90°	W1	
			6	
7	(a)	$3^2 \times 5$ or $3 \times 3 \times 5$	W2	W1 for partial factorisation **or** W1 for 3, 3, 5
	(b)	15	W2	W1 for 3×5^2 or 3, 5, 5 on factor tree or $3 \times 5 \times 5$ seen or W1 for answer 3, 5 or 3 × 5
			4	
8	(a)	$5(a+2)$	W1	Condone missing final bracket
	(b)	Final answer $(x-5)(x-3)$	W2	W1 for $(x \pm 3)(x \pm 5)$ seen
			3	

9	(a) $2x = 5$	M2	M1 for $3x - x = 1 + 4$ or $2x = -3$ or $3x - x = 1 - 4$ or $4x = 5$ or $3x + x = 1 + 4$
	$2\frac{1}{2}$ or 2.5 or $\frac{5}{2}$ i.s.w.	A1	Accept embedded answers Answer only W3
	(b) Muliplication of equation(1) by 2 or	M1	At least 2 terms correct
	Multiplication of equation(1) by 3 and Multiplication of equation(2) by 2		At least 2 terms correct in each
	Correctly subtracting equations	M1	Accept 2 terms correct
	$x = -1$ $y = 4$	A1	Answer only W1
		6	
10	(a) 270000	W1	
	(b)(i) 1.5×10^2 or 150	W2	W1 for figs 15 seen
	(ii) $\frac{7}{4} \times \frac{5}{14}$ (= $\frac{35}{56}$)	M2	M1 for $\frac{7}{4}$ or $\frac{14}{5}$ or equivalents seen
	$\frac{5}{8}$	A1	Answer only W3
		6	

TOTAL 50 marks

SECTION B

11		Correct labelled pie chart	W4	Allow $\pm 1\%$ or $\pm 4°$ Accept 3 sectors correct W3 if not labelled W3 for 2 sectors correct and labelled W2 if not labelled W1 for 1 sector correct and labelled
		If no marks awarded for the pie chart allow W1 for 30%, 40%, 20% and 10% seen **or** W1 for 108°, 144°, 72° and 36° seen		
			4	
12	(a)	AB = 2.8 to 3.2 cm	W1	
		Angle ABC = 97 to 103°	W1	
		CD = 3.8 to 4.4 cm	W1	
		AD = 9.8 to 10.2 cm	W1	
	(b)	$0.75 \div \frac{15}{60}$ or 0.75 × 4	M2	M1 for Speed = distance ÷ time eg 0.75 ÷ 15 (= 0.05)
		3	A1	Answer only W3
			7	
13	(a)	Final answer $10x + 3y$	W2	W1 for each **or** W1 for $4x + 6x + 2y + y$
	(b)	$5 \times 5.9 \times 6.8$	M1	
		200.6	A1	Answer only W2
			4	
14	(a)	9.2	W2	W1 for 9.1(6.....) or 9.17
	(b)	6.4×10^7	W2	W1 for figs 64
			4	

15	(a)	$320 \times \frac{115}{100}$	M2	M1 for $320 \times \frac{15}{100}$ (= 48)
		368	A1	Answer only W3
	(b)	$420 \times \frac{n}{5+4+3}$	M1	Implied by 35 seen
		175, 140, 105	A2	A1 for 2 correct Answer only W3
			6	

16	(a)	$2x = 6 + 1$	M1	
		$3\frac{1}{2}$ or 3.5 or $\frac{7}{2}$ i.s.w.	A1	Accept embedded answers Answer only W2
	(b)	One value in the range 1< *x* < 2 correctly substituted	W1	Accept outcomes either Corrected or truncated to 1 significant figure or better
		One value in the range1.5 < *x* < 2 correctly substituted	W1	
		One value in the range 1.7 < x < 1.8 correctly substituted	W1	
		1.74	W1	
			6	

17		$\frac{\pi \times 4^2}{(2)}$	M1	
		25.1 to 25.2	A1	Answer only W2
		88 + their 25.13	M1	Dep on use of π
		Subtracting $\pi \times 1^2$ (=3.1...)	M1	Independent
		109.9 to 110.1 n.w.w.	A1	Answer only W5
			5	

18	(a)	– 4, – 1, 4	W2	W1 for 2 correct or W1 for –5, –4, –1
	(b)	$n^2 = t + 5$	M1	
		$(n =)\sqrt{t+5}$	A1	SC1 for $\frac{t+5}{2}$ or $\frac{t+5}{n}$ Answer only W2
			4	

19	Scale drawings score no marks			
	(a) $\sqrt{2.78^2 + 2.36^2}$ $(AD^2) = 2.78^2 + 2.36^2$		M2	M1 for (= 13.29.....)
	3.6 to 3.7		A1	SC2 for 4.46 to 4.47 seen SC1 for 19.93 to 19.95 seen Answer only W3
	(b) Tan = $\frac{2.36}{3.79}$ (= 0.62....) or equivalent		M2	M1 for Tan = $\frac{3.79}{2.36}$
	31.8 to 32(.0)°		A1	Answer only W3
			6	
20	(a) 0.7 or 0.6 seen		W1	
	Tree diagram completed		W1	
	(b) Their[$(1-0.3)\times(1-0.4)$]		M1	
	0.42 or $\frac{42}{100}$ or $\frac{21}{50}$ or 42%		A1	Answer only W2
			4	

TOTAL 50 marks